Copy to Beaver
John
George
Larry

Mobil Chemical Company

RESEARCH AND DEVELOPMENT LABORATO
Dr. T. Ellison
P.O. BOX 240
EDISON, NEW JERSEY 08817
(201) 321-6249

October 31, 1977

Mr. John J. O'Neill, President
Vertrac Consolidated
Suite 2414
Memphis, Tenn. 38137

Dear Mr. O'Neill:

The Phosphorus Division of Mobil Chemical Company has asked that I send our latest toxicity information on CBE (chlorinated benzoate ester) and NBE (nitrated methyl chlorobenzoate ester).

Toxicity Test	CBE	NBE
Acute oral LD_{50} (rat)	1.00 ± 0.96 g/kg (Moderately Toxic)	4.80 ± 0.482 g/kg (Slightly Toxic)
Acute Dermal LD_{50} (rabbit)	> 5.0 g/kg (Non-toxic)	> 5.0 g/kg (Non-toxic)
Inhalation (single dose, 1 hour exp.	> 22.58 mg/l (Non-toxic)	> 21.11 mg/l (Non-toxic)
Eye irritation	Non-irritating	Non-irritating
Primary dermal	1.58 (slight irritation)	2.29 (moderate irritation)
Mutagenic (Ames)	Negative	Negative

Copies of the toxicology reports are enclosed.

If you have any questions regarding these results, please call me directly.

9352384

Sincerely,

Mobil Chemical Company

Theodore Ellison

Theodore Ellison, Ph.D.
Senior Toxicoligist

TE/st

CC: W. Shackleford wo/attach.
W. Smithey, Jr. wo/attach.

Mobil Chemical Company

CROP CHEMICALS GROUP

P.O. BOX 26683
RICHMOND, VIRGINIA 23261
TELEPHONE (804) 798-4291

December 23, 1977

Mr. John Miles
Eagle River Chemical Corporation
P. O. Box 2648
W. Helena, Arkansas 72390

Dear John:

Our suppliers of Sulfuric and Nitric Acids have been advised to provide a certificate of analysis with each shipment to your location in the future. Please check the next few shipments of these materials to be sure certificate is being provided at time of delivery.

Sincerely,

F. L. Lattire

F. L. Lattire
Manager Product Control

cbm

Mobil Chemical Company

purchase order

PHOSPHORUS DIVISION
P.O. BOX 26683
RICHMOND, VIRGINIA 23261

DATE	ACCOUNT	TAXABLE	TAX EXEMPT	ORDER NO.
11-14-77	21B5-0511-309-013	NO	YES	R 2314-M

TO Eagle River Chemical Co.
P. O. Box 2648
W. Helena, Arkansas 72390

INVOICES MUST BE RENDERED IN **QUADRUPLICATE** TO THE ABOVE ADDRESS: ATTENTION ACCOUNTING DEPARTMENT

PAYMENT TERMS: net

DELIVERY TERMS: F.O.B. W. Helena, Ark.

SHIP TO: MOBIL CHEMICAL COMPANY
c/o Eagle River

SHIP VIA: Intra Plant Transfer

DATE REQUIRED AT DESTINATION: took place 10-25-77

PLEASE ENTER OUR ORDER FOR THE FOLLOWING, SUBJECT TO TERMS AND CONDITIONS SET FORTH IN THIS ORDER AND ON THE REVERSE SIDE HEREOF. IMPORTANT—THIS ORDER EXPRESSLY LIMITS ACCEPTANCE TO TERMS AND CONDITIONS STATED HEREIN, AND ANY ADDITIONAL OR DIFFERENT TERMS OR CONDITIONS PROPOSED BY THE SELLER ARE REJECTED UNLESS EXPRESSLY AGREED TO BY BUYER IN WRITING.

ITEM NO.	QUANTITY	DESCRIPTION
	36,000	98% Nitric Acid from EAgle River stock to continue operation due to problems with timely receipts due to tank leaks.
		X $.10/lb.
		Conf. to J. Miles of Eagle River.
cc:	Bob Hallifax	

IMPORTANT

SHOW ORDER NUMBER ON ALL PACKAGES, INVOICES, PACKING LISTS AND SHIPPER'S RECEIPTS.

ATTACH ORIGINAL BILL OF LADING OR EXPRESS RECEIPT AND RECEIPTED BILL FOR PREPAID TRANSPORTATION TO INVOICE.

ALL ITEMS MUST BE IDENTIFIED WITH MANUFACTURER'S NAME ON YOUR INVOICE.

PRICES SHOWN SHALL BE FOR PRODUCT ONLY. APPLICABLE TAXES SHALL BE STATED SEPARATELY.

TRANSPORTATION CHARGES ARE NOT TAXABLE. PLEASE BILL AS A SEPARATE ITEM ON YOUR INVOICE.

PLEASE ADDRESS ALL CORRESPONDENCE AND INVOICES TO: ATTENTION OF PURCHASING DEPARTMENT.

PURCHASING DEPARTMENT

BY W.R. Southworth

Mobil Chemical Company

CROP CHEMICALS GROUP

P.O. BOX 26683
RICHMOND, VIRGINIA 23261
TELEPHONE (804) 798-4291

November 15, 1977

Mr. John Miles
Eagle River Chemical Corporation
P. O. Box 2648
W. Helena, Arkansas 72390

Dear John:

SUBJECT: TRUCK DEMURRAGE

We are still experiencing demurrage charges on raw material receipts. Please investigate to see if these charges can be held to a minimum. Attached is an example of nitric delivery delay.

Sincerely,

F. L. Lattire
Manager, Product Control

cbm

Attachment

WHEELING PIPE LINE, INC.

TELEPHONE 862-4951
P.O. BOX 1718
EL DORADO, ARK.

UNIFORM STRAIGHT BILL OF LADING - SHORT FORM
NOT NEGOTIABLE - DOMESTIC

Tractor No. 1919
Trailer No. 632

OK

Shipper: Monsanto
Date: 10-31-77
Loading Place: El Dorado
Special Instructions:
Customer No. 3198
Origin Code:
Prepaid √ | Collect √ | C.O.D. √ | Pump Truck Yes | Extra Hose
Rate: .55000
Consignee: Eagle River Chem

Flammable Liquid
- GASOLINE
- FLAMMABLE GAS
- COMBUSTIBLE
- CORROSIVES
- OXIDIZERS
- POISON
- COMPRESSED GAS

ORDER NO.	DESTINATION	Comp	GALLONS	PRODUCT	QUANTITY	PROD. CODE	DEST. CODE	SHIPMENT CODE
590098	W. Helena Ark			Cow Whale				301085
				ACID		90	70.60	
				3198		96	1½ hr	@15.00 hr
				72660 G				
Time Rec. 3 PM				27060 T				
Date 10/28	Ordered By: Del. Time AM			45600 N				

DRIVER PAY RATE IF DIFFERENT FROM BILLING RATE	
MISC. DRIVER'S PAY	
Do Not Write In This Section	
TYPE	QUANTITY
96	2

Gal. Net | Gal. Gross | LPG | Dispatcher: DA

Received the above articles in good condition except as noted
CONSIGNEE'S SIGNATURE: F. Willis | DATE / /

Departed Terminal M
Returned Terminal M
Total Trip Time Hrs.

This is to certify that the above articles are properly described by name and are packed and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission.

Shipper
Verified By:

MILEAGES			
Loaded	200	Ark	400
Empty	200	La.	
Total	400	Miss.	
		Tenn.	
		Texas	

Delivery Data:	Loading	Unloading
To Start	M	M
Started	500A M	10:30A M
Finished	M	M
Delayed	6:30A Hrs.	1:00 PM Hrs.
Due To	1½	2½
	Loader's Signature	Consignee's Signature: F. Willis

BREAK DOWN
Place
Time of B.D. M
Time Reported M
Time Repaired M
Time Relieved M
Mechanic Sign

Key Stop Unloading Report | Trailer Temp. | Tank No. | Tank Temp. | Open / Close | Tank Gauge Open Ft. In. / Close Ft. In. | Trailer Temp. | Tank No. | Tank Temp. | Open / Close | Tank Gauge Open Ft. In. / Close Ft. In.

Waiting For Sample & analysis
sheet, 2 HRS

Terminal: EL DORADO
Signature: Driver Lewis R. Selman | Driver No. Agent 801
Co. Driver | Co. Driver No.

A007585
BILLING COPY

THIS DELIVERY TICKET MUST BE COMPLETE IN DETAIL. ENTIRE DELIVERY TICKET WILL BE RETURNED AND ALL PAYMENT REFUSED UNTIL QUESTIONABLE ITEMS ARE EXPLAINED OR ERRORS CORRECTED.

I certify all entries I have made on this report are correct.

"Safety is No Accident"

10/20/77

to PAT BOWMAR
SUBJECT - MOBIL NBE CONTRACT

PER YOUR REQUEST for a MOBIL NBE UNIT "PRICE tag", WE offer the following:

1. MOBIL REQUESTS A BUYOUT OPTION for NBE UNIT IF VERTAC or EAGLE RIVER IS SOLD to another party & NBE production IS JEOPARDIZED. HOWEVER, MOBIL DOES NOT WANT TO PURCHASE & OPERATE THE NBE UNIT (THIS IS an "OUT" for them only).
2. BASIS of COST to MOBIL IS ALL ASSETS of the MOBIL NBE UNIT including STRUCTURAL STEEL, PIPING, INSTRUMENTS, ETC.. Not included is the concrete foundation, tank farm SLAB, control room Bldg & ELECTRICAL vault / motor control center. Nor are offsite (RAIL SPOTS, ETC.), UTILITIES, etc. included.

(3) In pricing the MOBIL assets, the following was considered:

(a) Eagle River's charter is to make chemicals NOT sell productive assets.

(B) The accounting value for MOBIL NBE reflects "windfall" or non reccurring benefits on used equipment available at the time it was built.

(C) Replacement cost is a definite factor (McGraw-Hill index shows appx. 15-25% plant cost inflation for the 1975 to current time period).

(D) Discussed all of the above type factors with Jim Fowler for his comments.

(E) Considerable corrosion has taken place in the MOBIL NBE plant BUT Eagle River has consistently replaced equipment items with equal or better materials.

(4) Based on all of the above MOBIL NBE unit price estimate is:

$100,000

cc—J. Shackelford
J. Fowler J. Miles

George Mather

① American Precision Industries
— Greenville TN 1-615- 639-6771

② Model-6-48 after condenser
BASCO american precision
SER # 86613
TYPE 500 Heat exchanger (Bundle only)
5¼" O.D. X nominal 48" long.
2½" nozzles (two) on shell

③ Model-6-54 inner condenser
Basco american precision
Ser. # 86612
TYPE 500 (Bundle only)
6¼" O.D. X nom. 54" Long
3" nozzles (two) on Shell

④ QUOTE all carbon steel $ & delivery
&
carbon steel shell + SS tubes
$ & delivery

EAGLE RIVER CHEMICAL CO.

REQUISITION

№ 3791

TO: PURCHASING DEPARTMENT, PLEASE FURNISH THE FOLLOWING:

CHARGE ACCOUNT NO. MOBIL ~~[illegible]~~ CAPITAL			OUR P.O. NUMBER 2257
REQUESTED BY [illegible]	TO BE USED FOR [illegible] MOBIL NITRATION		COST EST. [illegible] 3000
DATE 7/17/76	DATE WANTED 8/16/76	F.O.B.	APPROVAL
DEPARTMENT OR LOCATION Maintenance		TERMS	

SUGGESTED SUPPLIER S & K [illegible]	SHIPPING INSTRUCTIONS
[illegible] HUNTINGDON VALLEY, PENNS 19006 [illegible] (215 - [illegible])	☐ FOR RESALE ☐ NOT FOR RESALE

ITEM NO.	QUANTITY	PART NUMBER	DESCRIPTION		
	1		MODEL - [illegible]		1752
			condenser [illegible]		1835
			stainless steel tubes		3130
			& [illegible] steel shell		
	1		MODEL [illegible]		1218
			condenser (Air Friction)		1377
			stainless tubes &		2395
			carbon steel shell		
	1		Body & [illegible]		130
			[illegible] with [illegible]		
			Steel [illegible]		
			2" [illegible] 530		
			All the above per		
			quote. Refer to S&K		
			order # 1175 - 2137 - J		
			for details.		
			Bundle		

☐ CONFIRMING ORDER TO: DATE: BY: METHOD:

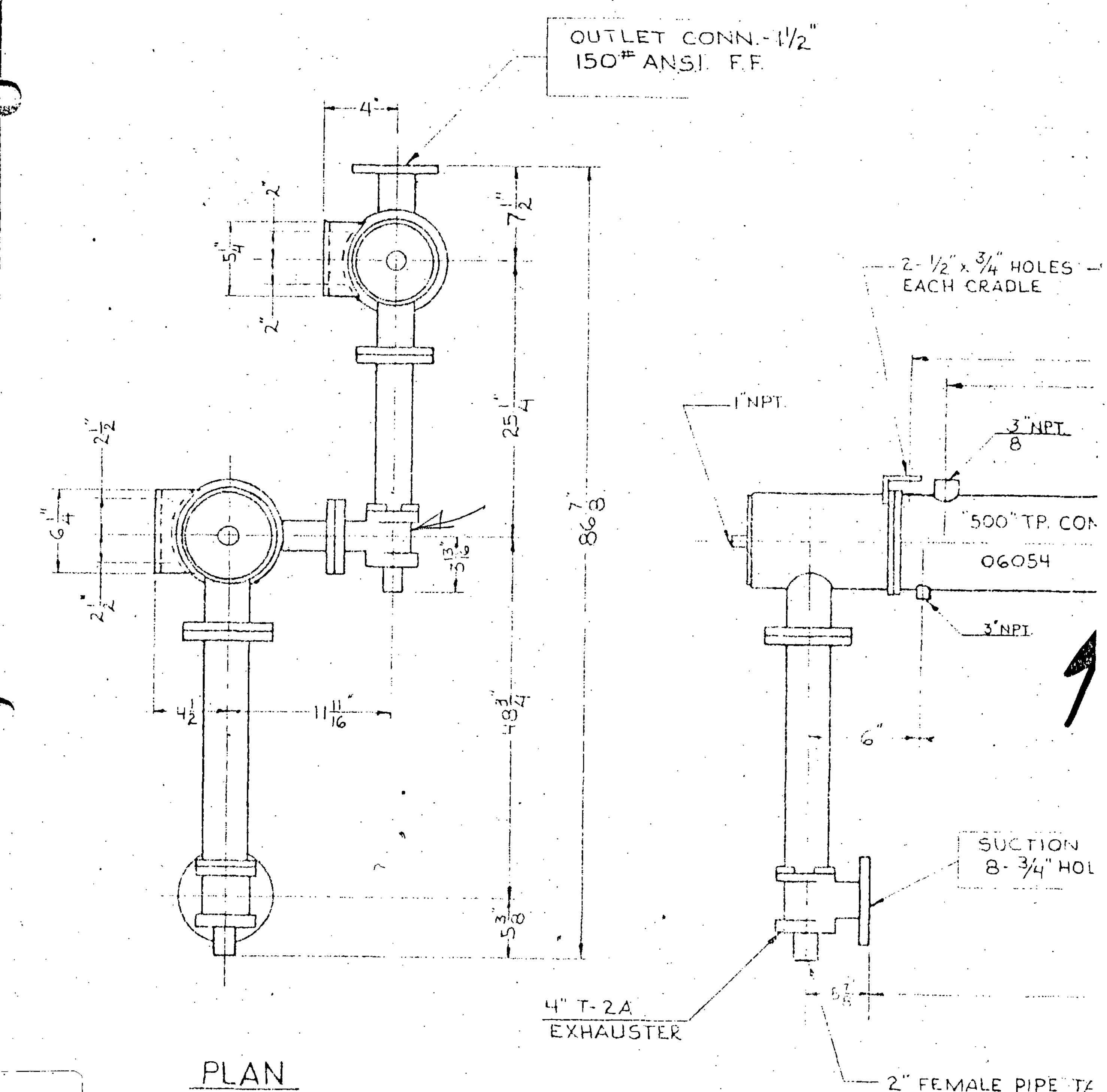
COPIES OF PURCHASE ORDER TO:

Form ER001

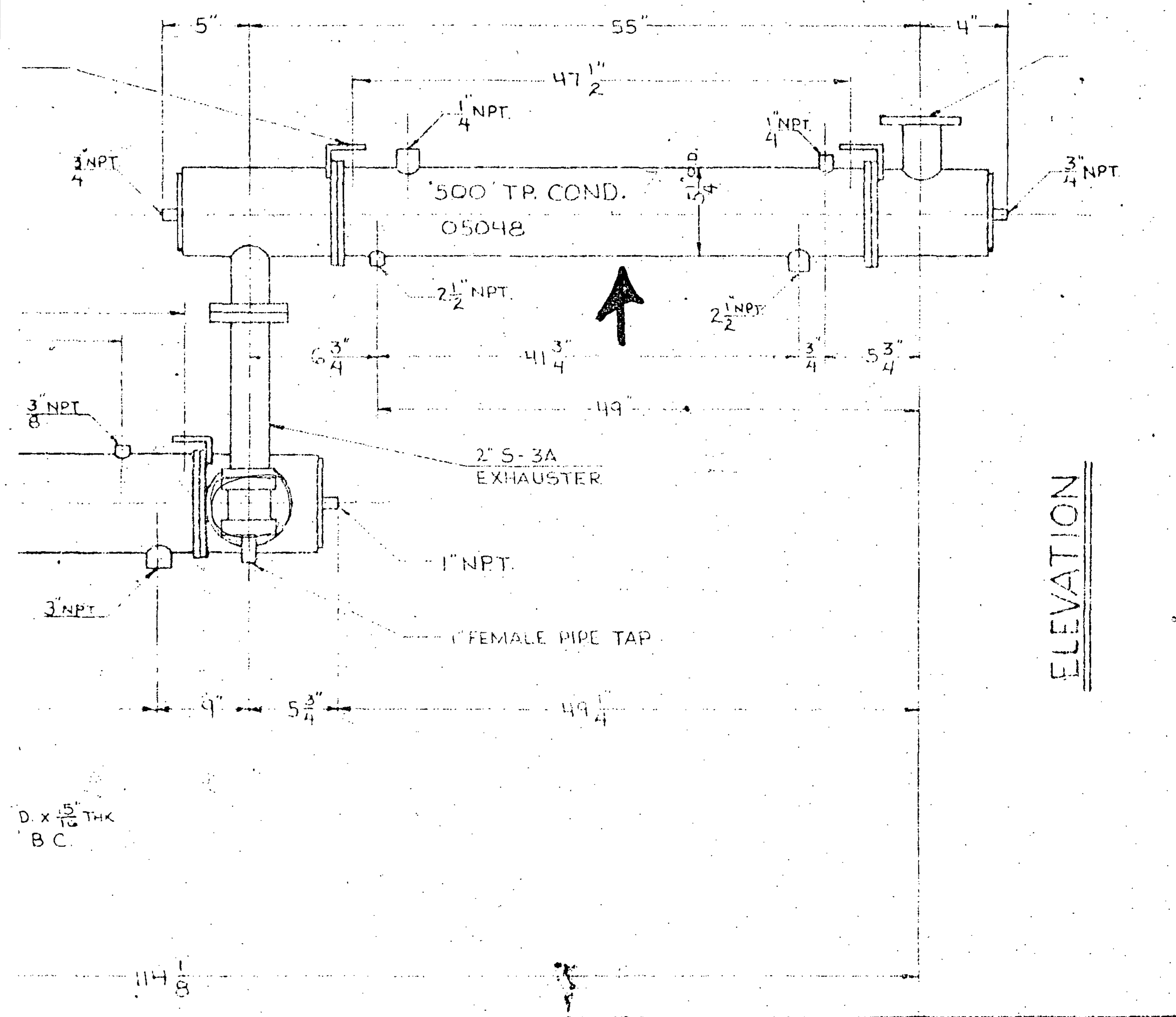
WARLOCK PRINTING - W. HELENA, ARK.

FILMED	LTR.	DESCRIPTION	DATE	APPROVED

REVISIONS



PLAN



BASIC JET USED at two Eagle River Process Units:

① 25 in Hg vacuum / 90°F vapor service (100 #/hr Xylene vapor, 10#/hr water vapor, & 18#/hr air leakage)

② Steam consumption 720#/hr @ 115 PSIG

③ Total cooling water — 62 gpm

④ $4000 in 1975

CERTIFIED FOR EAGLE RIVER CHEMICAL
ORDER NO. [illegible] DATE 11-6-75
S & K ORDER NO. [illegible] BY TEK

DO NOT USE FOR CONSTRUCTION
UNLESS CERTIFIED FOR A SPECIFIC ORDER

...HERWISE NOTED:
...S ARE IN INCHES
...ES STRADDLE ℄'S

DR TEK DATE 9-29-75
CHKD ____ DATE ____
APP'D ____ DATE ____
APP'D ____ DATE ____

SCHUTTE & KOERTING CO.
SUBSIDIARY OF AMETEK CORP.
CORNWELLS HEIGHTS BUCKS COUNTY, PENNA.

4"x2" TWO STAGE STEAM JET VACUUM PUMP

SIZE	CODE IDENT NO.	DRAWING NO.	REV
		75G-X102J	
SCALE N.T.S.	WT	SH 1 OF 1	

FORM [illegible] (69)

To: Bill Shackelford

Re: Mobil Operation

8/30/77

1. I plan to switch to every other week end operation in Mobil starting in September

2. However, I think we should consider getting a couple of extra men to work in Mobil if we go back to straight seven day operation. These men are easily justified

A. Value of incremental production (assumes adequate CBE)

1. Extremely conservative estimate of incremental production is 100,000 #/mo. Incremental value is 14¢/#

$$\$/mo = (100,000 \ \#/mo)(.14 \ \$/\#) = \$14000/mo$$

2. Cost of 2 men/year = \$23,000 = \$1917/mo

3.

B. Cost of labor - O.T. vs reg

Coverage by O.T. = \$3644/mo

Coverage by reg = \$1917/mo

3. Hiring of extra people will depend on P-10 prospects for continued production, but we need to be able to justify keeping our present work force size if P-10 goes down. JHM

Phone: (501) 572-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

JULY 26, 1977

MOBIL CHEMICAL COMPANY
P.O. BOX 26683
RICHMOND, VA 23261

ATTN: MR. FLOYD LATTIRE,
MANAGER OF PRODUCT CONTROL

SUBJECT: MOBIL NITRATION UNIT

WITH REGARD TO YOUR VISIT OF JULY 14TH, WE SUBMIT THE FOLLOWING FOR YOUR CONSIDERATION:

1) AS REQUESTED, THE ATTACHED INVOICE LISTS ACCUMULATED CHARGES FOR INSTALLING A WINTERIZED STAINLESS STEEL SPENT ACID TRANSFER LINE TO TANK CARS. THIS REVISION WAS INSTALLED FOR MOBIL CHEMICAL'S BENEFIT TO ACCOMODATE RAILCAR SHIPMENTS. FURTHER, THIS REVISION ELIMINATED TANK TRUCK RENTAL CHARGES FOR INTRA-PLANT TRANSFERS OF SPENT ACID FROM STORAGE TO RAILCARS ON OUR HOLD TRACK.

2) AS REQUESTED, WE HAVE UPDATED OUR EARLIER PROPOSAL FOR AN ETHYLENE DICHLORIDE (EDC) STORAGE TANK. THE ESTIMATED COST FOR A 20M GAL. CARBON STEEL STORAGE TANK; A PUMP; LEVEL INSTRUMENTATION & ALL ASSOCIATED PIPING, CONCRETE, FOUNDATIONS, ETC. IS $22,000. BASED ON A 4¢ PER LB SAVINGS ON BULK VERSUS DRUM EDC, PAYBACK OF NINETEEN MONTHS IS ESTIMATED. PAYBACK CALCULATION ASSUMES 350,000 LBS / YEAR OF EDC CONSUMED. PAYBACK PERIOD HAS INCREASED SINCE OUR EARLIER EDC STORAGE PROPOSAL PRIMARILY DUE TO LOWER EDC CONSUMPTIONS.

3) A THIRD AREA FOR YOUR CONSIDERATION ARE EXTRAORDINARY REPLACEMENTS TO THE MOBIL NITRATION UNIT. SPECIFICALLY, IN TWO AREAS; THE EDC RECYCLE TANK, T-M103, & THE NITRATION REACTOR COOLER, E-M101 ARE CONTINUING MAINTENANCE PROBLEMS DUE TO PROCESS CORROSION. ALTHOUGH EAGLE RIVER CAN CONTINUE TO SPEND MAINTENANCE DOLLARS ON THESE ITEMS, WE FEEL A BETTER SOLUTION FOR MAINTAINING LONG TERM MANUFACTURING POSITION & PLANT SAFETY IS A CAPITAL REPLACEMENT OF THESE ITEMS. BOTH THE REPLACEMENT EDC RECYCLE TANK AND THE NITRATION COOLER HAVE IMPROVED MATERIALS OF CONSTRUCTION. AN AUTHORIZATION REQUEST FOR THESE REPLACEMENTS HAS BEEN SUBMITTED TO VERTAC MANAGEMENT. PAT BOMAR OF THAT OFFICE COULD BEST DISCUSS OUR INTERESTS FOR EITHER THE EDC STORAGE TANK OR THE MOBIL EQUIPMENT REPLACEMENTS.

LET US KNOW IF YOU HAVE ANY FURTHER QUESTIONS.

George Mather
GEORGE MATHER

ATTACHMENT

CC: BILL SHACKELFORD
PAT BOMAR
RAY GUIDI
JOHN MILES
DON FAGGERT
JOHN ELLINGTON
RICHARD JOHNS
DICKY HILL
JOE PORTER
BARNEY MCAVOY

EAGLE RIVER CHEMICAL CORPORATION
P. O. BOX 2648
WEST HELENA, ARKANSAS 72390
Phone: (501) 572-3701

INVOICE № 281

INVOICE DATE August 8, 1977

FACTORY NO.

SALESMAN

TERMS

F. O. B.

SHIPPED TO

CUSTOMER'S ORDER NO.

SOLD TO
Mobil Chemical
P.O. Box 26683
Richmond, VA 23261

ATTN: Floyd Lattire

PLEASE MAIL PAYMENTS TO:
EAGLE RIVER CHEMICAL CORP.
P. O. BOX 2121
MEMPHIS, TENN. 38159

SHIPPED VIA	DATE SHIPPED

✓	QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	Invoice for Spent Acid Transfer Line-			
	Stainless Steel piping (270ft. of 2'' SS pipe, three 2'' SS ball valves, nine 2'' SS ells, two 2'' SS tees, two 2'' SS flanges)			$1,684.52
	Electrical heater tracing (250 ft plus installation kit)			696.10
	Fiberglass insulation (280 ft x 2'' diameter)			381.90
	Concrete (Four yards)			120.00
	Blocks & Mortor			30.00
	Labor (153 hours total)			1,071.00
				$3,983.52

The goods specified herein were produced in compliance with the requirements of the Fair Labor Standards Act of 1938 as amended.

STANDARD FORM 4451-A
MATTICK BUSINESS FORMS
WHEELING, ILL.

ORIGINAL

Phone: (501) 872-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

John

Preliminary

JULY 26, 1977

MOBIL CHEMICAL COMPANY
P.O. BOX 26683
RICHMOND, VA 23261

ATTN: MR. FLOYD LATTIRE,
MANAGER OF PRODUCT CONTROL

SUBJECT: <u>MOBIL NITRATION UNIT</u>

WITH REGARD TO YOUR VISIT OF JULY 14TH, WE SUBMIT THE FOLLOWING FOR YOUR CONSIDERATION:

1) AS REQUESTED, THE ATTACHED INVOICE LISTS ACCUMULATED CHARGES FOR INSTALLING A WINTERIZED STAINLESS STEEL SPENT ACID TRANSFER LINE TO TANK CARS. THIS REVISION WAS INSTALLED FOR MOBIL CHEMICAL'S BENEFIT TO ACCOMODATE RAILCAR SHIPMENTS. FURTHER, THIS REVISION ELIMINATED TANK TRUCK RENTAL CHARGES FOR INTRA PLANT TRANSFERS OF SPENT ACID FROM STORAGE TO RAILCARS ON OUR HOLD TRACK.

2 Waiting on this

2) AS REQUESTED, WE HAVE UPDATED OUR EARLIER PROPOSAL FOR AN ETHYLENE DICHLORIDE (EDC) STORAGE TANK. THE ESTIMATED COST FOR A 20M GAL. CARBON STEEL STORAGE TANK; A PUMP; LEVEL INSTRUMENTATION & ALL ASSOCIATED PIPING, CONCRETE, FOUNDATIONS, ETC. IS $22,000. BASED ON A 4¢ PER LB SAVINGS ON BULK VERSUS DRUM EDC, PAYBACK OF NINETEEN MONTHS IS ESTIMATED. PAYBACK CALCULATION ASSUMES 350,000 LBS / YEAR OF EDC CONSUMED. PAYBACK PERIOD HAS INCREASED SINCE OUR EARLIER EDC STORAGE PROPOSAL PRIMARILY DUE TO LOWER EDC CONSUMPTIONS.

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LET US KNOW IF YOU HAVE ANY FURTHER QUESTIONS.

George Mather

GEORGE MATHER

ATTACHMENT

CC: BILL SHACKELFORD
PAT BOMAR
RAY GUIDI
JOHN MILES
DON FAGGERT
JOHN ELLINGTON
RICHARD JOHNS
DICKY HILL
JOE PORTER
BARNEY MCAVOY

Phone: (501) 572-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

JULY 26, 1977

MOBIL CHEMICAL COMPANY
P.O. BOX 26683
RICHMOND, VA 23261

ATTN: DON FAGGERT, REGIONAL MANAGER

SUBJECT: MOBIL NITRATION UNIT-BATCH SIZE INCREASE

DEAR DON:

FOLLOWING DISCUSSION WITH JOHN ELLINGTON, THE MOBIL NITRATION BATCH SIZE WAS INCREASED BY 7% ON JULY 16TH. EARLY INDICATIONS ARE THAT MOST OF THE SIZE INCREASE HAS RESULTED IN A NEARLY EQUIVALENT PRODUCTION RATE INCREASE. TO DATE, NO OPERATING PROBLEMS HAVE DEVELOPED NOR HAS PRODUCT PURITY BEEN AFFECTED. FOR YOUR FILES, WE HAVE ATTACHED THE PLANT TEST PROCEDURE NOW IN EFFECT FOR THE LARGER BATCH. AS CAN BE SEEN, THE SULFURIC ACID AND ETHYLENE DICHLORIDE CHARGES WERE SCALED UP LESS THAN 7% TO AVOID OVERFILLING THE REACTOR. THIS ''FINE TUNING'' OF SULFURIC ACID AND ETHYLENE DICHLORIDE MAY RESULT IN IMPROVED YIELD FACTORS FOR THESE MATERIALS.

LET US KNOW IF YOU HAVE ANY FURTHER QUESTIONS.

George Mather

GEORGE MATHER

ATTACHMENTS
CC: BILL SHACKELFORD
PAT BOMAR
RAY GUIDI
JOHN MILES ✓
JOHN ELLINGTON
FLOYD LATTIRE
LARRY CONAWAY
RICHARD JOHNS
JOE PORTER

TO — JOHN MILES	CALCULATIONS AND DESIGN DATA	PREPARED BY JF[illegible]
SUBJECT MOBIL PLANT TEST —		DATE 7/14/77
INCREASED BATCH SIZE for INCREASED PRODUCTION		SHEET 1 OF 2

Detailed below are recommended charges for an increased MOBIL Batch Size. Since R-M101 is approaching its upper limit, less critical charges (EDC & H_2SO_4) are not increased quite as much as CBE and HNO_3. Reviewing past Data, I do not see a problem with slightly smaller EDC & H_2SO_4 charges (yields may improve slightly in fact). However, as with any plant change Operators, Supervisors, & the LAB need to be on the lookout for problems. Possible problems altho not expected include overfilling reactor, NBE purity problems, & CBE or NBE crystals formed in R-M101.

It is recommended that we operate MOBIL in this manner (should problems not develop) until current High CBE inventory is reduced to normal. At that time the results of the larger Batch can be reviewed and if successful new standard operating conditions will be issued.

Please don't hesitate to have the Operators or Supervisors call me. [illegible]

CALCULATIONS AND DESIGN DATA

PREPARED BY: GF/Mayhew

SUBJECT: MOBIL PLANT TEST — INCREASED BATCH SIZE for increased production

DATE: 7/14/77

SHEET 2 OF 2

MATERIAL	PRESENT UNIT DATA SHEET	PROPOSED INCREASE e/
EDC	13,200 LBS	13,860 LBS a/
CBE	8,790 LBS	9,405 LBS B/
HNO_3 TOTAL	286 gals	306 gals. c/
H_2SO_4	575 gals	594 gals d/

a/ REPRESENTS 5% INCREASE IN EDC / (New charge 1319 gals.)

B/ REPRESENTS 7% INCREASE IN CBE. CBE % in EDC calculated as 40.4% / CONTINUE to MONITOR & adjust for OUT of Range CBE concentration / (New charge 943 gals).

c/ REPRESENTS 7% increase in HNO_3 / (new charge 3840 LBS)

d/ REPRESENTS 3% increase in H_2SO_4 per data sheet (7% increase over commonly charged quantity of 555 gals). / (new charge 9091 LBS)

e/ TOTAL NEW gallons 3162 gals. VERSUS present gallons 2999 gals. My BEST info indicates R-1-1101 WILL STILL Have adequate dome Space. Production NBE NEW 12,400# VS 11,600# /Batch.

To: JW Shackelford 6/1/77

Re: Mobil Contract Negotiation

1. Increase from 16¢ → 16.6¢

$ /loss YTD = (.006)(2,310,667) = $13864

2. Increase of operators wage rate $5.12 → 5.45

$/loss (May) = $\left(\frac{.45}{.10}\right)$(.0012)(384,073) = $2074

3. Increase of electrical cost 2.8¢/KWH → /KWH

$/loss = ? (Need ¢/KWH for each month)

4. Penalty payment for < 400000 #/mo production (I hope this is correct)

$ = [A - (B + C + D + E)] x F

A = 400,000

B = 331341 (APRIL) 384073 (MAY)

C = 0 → CBE Receipts ←

D = APR = $\frac{283940}{.83}$ = 342096 MAY = $\frac{323480}{.83}$ = 389735

− 331341 / 10755 384073 / 5662

E = 0

F = 0.123

APRIL $ Loss = [400,000 − (331341 + 0 + 10755 + 0)] X .123 = $7122

MAY $ Loss = [400,000 − (384073 + 0 + 5662 + 0)] X .123 = $1263

5. Total loss YTD = $24323 (not incl elec. adjustment)

cc: G Mather

JSM 6/1/77

February 3, 1977

EAGLE RIVER CHEMICAL CORP.

TO: J.J. O'NEILL

FROM: MIKE MCKELLAR

REFERENCE: PARAGRAPH 4(a) - APPENDIX B

The fee increase of \$0.0012 was determined as follows:

$$\left[(\$0.10 \div \$5.12)(0.45)\right] \times \$0.138 = \$.0012$$

Where: - \$0.10 is the increase per hour
- \$5.12 is the base wage rate of lead operators
- 0.45 is the percent labor included in our MFG. cost
- \$0.138 is the total MFG. cost at a production level of 450,000 lb. NBE

Mike McKellar
MikeMcKellar

MM/sjj

VERTAC, INC. SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137 • 901-767-6851

INTER-OFFICE CORRESPONDENCE

~~John O'Neill~~
J. W. Shackleford

DATE: February 15, 1977

TO: R. A. Guidi

FROM: C. P. Bomar

SUBJECT: MOBIL NBE CONTRACT - THEIR DRAFT OF 2/4/77

REPLY REQUESTED BY (DATE)

As requested, I have examined the subject draft as delivered by Don Faggert on 2/11/77. In comparing this draft with the 1/10/77 draft amendment of J. J. O'Neill and reviewing the contract in general, I would like to make the following comments:

(1) The contract should be with Vertac, Inc. instead of Eagle River.

(2) Mobil has inserted the right to ship NBE by tank truck. (Sec.2,c.)

(3) There is a typographical error in Sec. 14, line 6; change "will" to "with".

(4) Modify Sec. 19 so that notices come to the Vertac office.

(5) Section 25 must be changed to include the exception relating to the sale of all the assets of Eagle River, etc. This was properly worded in our 1/10/77 draft and was deleted by Mobil. In addition, they increased the exercise period from 30 days to 60 days.

Mobil has no basis for deleting this in that they have reserved the right to sell their crop chemical's business under Sec. 22, C., etc.

(6) The paragraph after the signatures should be deleted since the contract will be with Vertac.

(7) Under Appendix A, there was no change. However, the CBE assay specification shows 93-95% minimum. We should establish an absolute minimum instead of a range.

(8) Under Appendix B, 1., the price has been reduced from \$0.170 to \$0.167.

(9) Under Appendix B, 3., Mobil has changed the "production excess" credit from that above 6,000,000 lbs. per calendar year to that above 1,500,000 in any consecutive three months.

(10) Under Appendix B, 4., a., the wage rate escalation factor was changed from \$0.0012 to \$0.0010 per pound.

(11) Under Appendix B., 4., c., the steam escalation rate was increased from $0.0002 to $0.0003 per pound. (This is an increase and/or decrease factor).

(12) Mobil eliminated our ability to terminate the agreement if they do not take 4.8 MM pounds in a calendar year by eliminating Section 6 from Appendix B.

(13) The usage of 95% CBE per pound of NBE was set at 0.825 pounds. I believe that Bill Shackelford wanted 0.83. Faggert claims our consumption through November of 1976 was 0.8213 lbs. per lb. of NBE. Other raw material factors correspond to our request.

As soon as you have reviewed this, we should meet and establish which of the above changes are acceptable. I will then contact Faggert to give him our final position. (Please give particular consideration to items 5.,7.,8.,9., and 12 above).

C. P. Bomar

C. P. BOMAR

/em

CC: J. J. O'Neill
A. T. Malone
J. W. SHACKELFORD

Mobil Costs

① Labor

Base $5.12

INCREASE $0.10

% INC = $\frac{0.10}{5.12}$ = 0.0195

.0880
.0734
.1614
.1600
.0014

45% of cost is labor

$.166 X .45 = $.0747

INCREASE 1.95%

$.0747 X 1.0195 = $.0762

55% of cost is not labor

$.166 X .55 = $.0913

PLUS INFLATED LABOR .0762

$.1675

LESS ORIG COST .1660

$.0015 = Δ increase – 10¢ increase in labor

② Steam – Typo error – should be $0.0002 not $0.002

JM
2/2/77

NBE P/L ANALYSIS

10/28/76

	400,000		450,000		500,000	
REVENUE						
DIRECT VARIABLE COST						
SALARY & FRINGES	1792	.004	1792	.004	1792	.004
WAGES & FRINGES	9996	.025	9996	.022	9996	.020
SUBTOTAL	11,788	.029	11,788	.026	11,788	.024
UTILITIES						
ELECTRICITY	4920	.013	5535	.013	6150	.012
WATER	550	.001	600	.001	750	.002
STEAM	1600	.004	1800	.004	2000	.004
SUBTOTAL	7,070	.018	7,935	.018	8,900	.018
OTHER						
NITROGEN	2880	.007	3240	.007	3600	.007
OTHER	1859	.005	1859	.004	1859	.004
SUBTOTAL	4,739	.012	5,099	.011	5,459	.011
SUBTOTAL	23,597	.059	24,822	.055	26,147	.053
DIRECT FIXED COST						
LABORATORY	3973	.010	3973	.009	3973	.008
STORES/REC.	906	.002	906	.002	906	.002
SAFETY/SEC.	2977	.007	2977	.007	2977	.006
MAINTENANCE	14252	.036	14252	.032	14252	.029
CORPORATE G/A	3000	.008	3000	.006	3000	.005
PERIOD COSTS						
ADMINISTRATIVE	5706	.014	5706	.013	5706	.011
INS.,TXS.,DEPR.	6388	.016	6388	.014	6388	.013
SUBTOTAL	37,202	.093	37,202	.083	37,202	.074
TOTAL	60,799	.152	62,024	.138	63,349	.127

EAGLE RIVER CHEMICAL CORP.

CALCULATION OF SHIFT SUPERVISOR

AVERAGE SALARIES

Bobby Vallun	276.92
Melvin Haynes	288.64
Joel Walker	265.38
Andy Seeman	282.69

1,113.63 - ave - 278.40

(52 wk)($278.40)(4men)÷(12mos) = $4,825.60 x (1.08) = $5211

ASS'T PLANT MANAGER

(1/2)(2233.33) = 1,116.00 x (1.10) = 1227

	$6438
ALLOCATED %	x .236
	1519
ADD FRINGES (.18)	1.18
	$1792

10-25-76

EAGLE RIVER CHEMICAL CORP.

CALCULATION OF NBE (MOBIL) WAGES

AVE. WAGES - $4.79 (SEE ATTACHED)

STRAIGHT TIME

(24HR)(365DAY)($4.79)(2 MEN PER SHIFT) ÷ (12 MOS) =	6,993
SHOWER TIME:	
(13 SHIFT CYCLES)(10.5 HR CYCLE)($7.19)(8MEN) ÷ (12MOS)=	654
6TH DAY:	
(52WKS)(8HR) ÷ (12MOS) =	83
ADD: O/T (36.5 HR)($7.19)	262
	7,992
ANTICIPATED INCREASE	X 1.06
TOTAL	8,472
ADD: FRINGES (.18)	1,524
	9,996

EAGLE RIVER CHEMICAL CORP.

DETAIL OF MAINTENANCE CHARGES

AVE. MAN - 3.33
AVE. WAGE- 5.06

WAGES & FRINGES

(3.33 MEN)($5.06)(40HR)(52WK) ÷ (12MOS) =		2920	
OVERTIME			
(3.33 MEN)($7.59)(4 HR/WK)(52WK) ÷ 12MOS)=		438	
SHOWER TIME			
(3.33 MEN)($7.59)(2.5HR/WK)(52WKS) ÷ (12MOS)=		273	
	SUB-TOTAL	3631	
ANTICIPATED INCREASE		X 1.06	
	SUB-TOTAL	3848	
	ADD: FRINGES (.18)	692	$4540
SALARIES & FRINGES			
($2600 SALARIES/MO)(.28 MEN) =		728	
ANTICIPATED INCREASE		X 1.08	
	SUB-TOTAL	786	
	ADD: FRINGES (.18)	141	927
MAINTENANCE SUPPLIES			4800
MAINTENANCE OVERHEAD			2900
OTHER (TRAVEL, ORDINARY SUPPLIES, MAINT.TOOLS, ETC.)			1085
			$14252

EAGLE RIVER CHEMCIAL CORP.

DETAIL OF LABORATORY CHARGES

LABORATORY

Ave. Man - 2.264
Ave. Wage- 5.50 (Includes Scheduled Overtime)

WAGES & FRINGES

(2.264 men)(182.5 hr/mo)($5.50) =	2,272	
ANTICIPATED INCREASE	1.06	
SUB-TOTAL	2,408	
ADD: FRINGES (.18)	433	$2841

SALARY & FRINGES

LAB MGR. 1/4 - time	417	
CHEMIST 1/8 - time	157	
SUB-TOTAL	574	
ANTICIPATED INCREASE	1.08	
SUB-TOTAL	$ 620	
ADD: FRINGES (.18)	112	732
LAB SUPPLIES		100
LAB OVERHEAD		300
		$3973

ADMINISTRATIVE

	Total Department Chg.	NBE CHARGE	%
Administrative	9507	2244	
Engineering	5685	389	
Accounting	10165	2399	
Purchasing	2291	674	
	27648	5706	.206

WATER

ck#2665 - 8/18/76				
	Water Cost	805.36		
	Per 100 gal.	÷14,618	.05509	July
ck#2910 - 9/17/76				
	Water Cost	728.57		
	Per 100 gal.	÷13,127	.05550	August
ck#3060 - 10/18/76				
	Water Cost	674.45		
	Per 100 gal.	÷12,076	.05585	September

Total Water Cost 2208.38
Total Per 100 gal. ÷ 39,821
.0555

A) Usuage - .002 (.002)(.5550)= .001
Cost - .0555

B) (400,000)(.001) = 400 + 150 = 550
(450,000)(.001) = 450 + 150 = 600
(500,000)(.001) = 500 + 150 = 750

ELECTRICITY

ck#2685 -	Meter 42-609-215			
	Electricity Cost	7,139.59		
	Tax	214.19		
		7,353.78		
	KWH	÷289,680	.02539	July
ck#2909 -	Meter 42-609-215			
	Electricity Cost	7,566.14		
	Tax	266.98		
		7,793.12		
	KWH	÷ 301,920	.02581	August
ck#3073 -	Meter 42-609-215			
	Electricity Cost	8,979.22		
	Tax	269.38		
		9,248.60		
	KWH	÷ 320,640	.02884	September

Total Cost July- September - 24,395.50
Total KWH ÷ 912,240
.02674

A) Usuage = .46 (.46)(.02674)=.0123
$ = .02674

B) ($.0123)(400,000 lb) = 4920
($.0123)(450,000 lb) = 5535
)$.0123)(500,000 lb) = 6150

STEAM

ck#2678	Steam Cost		5558.03	
	Per 1000 ft	÷	7070	
			.7861	April
ck#2914	Steam Cost		3925.34	
	Per 1000 ft	÷	4898	
			.8014	May
ck#3061	Steam Cost		2337.42	
	Per 1000 ft	÷	2772	
			.8432	June

Total Steam Cost April - June		11,820.79
Total per 1000 ft^3	÷	14740
		.80195

1. ck#1203 - Arkla Gas Company 1/16/76

Gas Cost		5858.61
Per 1000 cubic ft.	÷	7,845
		.7468

2. ck#1498 - Arkla Gas Company 2/18/76

Gas Cost		5469.18
Per 1000 cubic ft.	÷	7,099
		.7704

3. ck#1634 - Arkla Gas Company 3/17/76

Gas Cost		4768.00
Per 1000 cubic ft.	÷	5,836
		.8170

4. ck#1787 - Arkla Gas Company 4/17/76

Gas Cost		3976.43
Per 1000 cubic ft.	÷	4,984
		.7978

5. ck#1984 - Arkla Gas Company 5/24/76

Gas Cost		5558.03
Per 1000 cubic ft.	÷	7,070
		.7861

6. ck#2320 - Arkla Gas Company 6/16/76

Gas Cost		3925.34
Per 1000 cubic ft.	÷	4,898
		.8014

7. ck#2499 - Arkla Gas Company 7/26/76

Gas Cost		2337.42
Per 1000 cubic ft.	÷	2,772
		.8432

8. ck#2678 - Arkla Gas Company 8/19/76

Gas Cost		428.93
Per 1000 cubic ft.	÷	394
		1.0887

9. ck#2914 - Arkla Gas Company 9/20/76

Gas Cost		610.18
Per 1000 cubic ft.	÷	568
		1.0743

10. ck#3061 - Arkla Gas Company 10/18/76

Gas Cost		561.50
Per 1000 cubic ft.	÷	476
		1.180

1.	ck#1211 -	Woodruff Electric Coop. Corp.			1/16/76
		Meter #42-609-215			
		Electricity Cost	5870.90		(2.998)mills/kwh
		Tax	176.13	6047.03	
		Kilowatt Hours		÷ 30400	
				.19892	
2.	ck#1463 -	Woodruff Electric Coop. Corp.			2/16/76
		Meter #42-609-215			
		Electricity Cost	6166.70		(2.629)
		Tax	185.01	6351.71	
		Kilowatt Hours		÷233,280	
				.02723	
3.	ck#1616 -	Woodruff Electric Coop. Corp.			3/11/76
		Meter #42-609-215			
		Electricity Cost	5609.61		(3.216)
		Tax	168.29	5777.90	
		Kilowatt Hours		÷ 8080	
				.71509	
4.	ck#1768 -	Woodruff Electric Coop. Corp.			4/14/76
		Meter #42-609-215			
		Electricity Cost	5812.17		(4.464)
		Tax	174.37	5986.54	
		Kilowatt Hours		÷206,640	
				.02897	
5.	ck#1976 -	Woodruff Electric Coop. Corp.			5/24/76
		Meter #42-609-215			
		Electricity Cost	6535.69		(5.542)
		Tax	196.07	6731.76	
		Kilowatt Hours		÷233,280	
				.02886	
6.	ck#2305 -	Woodruff Electric Coop. Corp.			6/15/76
		Meter #42-609-215			
		Electricity Cost	7133.45		(6.541)
		Tax	214.00	7347.45	
		Kilowatt Hours		÷247,440	
				.02969	
7.	ck#2477 -	Woodruff Electric Coop. Corp.			7/14/76
		Meter #42-609-215			
		Electricity Cost	6923.17		(5.764)
		Tax	207.70	7130.87	
		Kilowatt Hours		÷248,160	
				.02873	
8.	ck#2658 -	Woodruff Electric Coop. Corp.			8/18/76
		Meter #42-609-215			
		Electricity Cost	7139.59		(3.527)
		Tax	214.19	7353.78	
		Kilowatt Hours		÷289,680	
				.02539	
9.	ck#2909 -	Woodruff Electric Coop. Corp.			9/17/76
		Meter #42-609-215			
		Electricity Cost	7566.14		(4.222)
		Tax	226.98	7793.12	
		Kilowatt Hours		÷301,920	
				.02581	

1. ck#1200 - West Helena Water Utilities 1/15/76
Water Cost 848.50
Per 100 gallons ÷ 20,082
.04225

2. ck#1474 - West Helena Water Utilities 2/17/76
Water Cost 1003.86
Per 100 gallons ÷ 23,853
.04208

3. ck#1635 - West Helena Water Utilities 3/17/76
Water Cost 1037.42
Per 100 gallons ÷ 19,724
.05260

4. ck#1786 - West Helena Water Utilities 4/19/76
Water Cost 817.46
Per 100 gallons ÷ 15,453
.05290

5. ck#1982 - West Helena Water Utilities 5/24/76
Water Cost 968.82
Per 100 gallons ÷ 18,392
.05268

6. ck#2307 - West Helena Water Utilities 6/16/76
Water Cost 868.34
Per 100 gallons ÷ 16,441
.05282

7. ck#2485 - West Helena Water Utilities 7/16/76
Water Cost 818.23
Per 100 gallons ÷ 15,468
.05290

8. ck#2665 - West Helena Water Utilities 8/18/76
Water Cost 805.36
Per 100 gallons ÷ 14,618
.05509

9. ck#2910 - West Helena Water Utilities 9/17/76
Water Cost 728.57
Per 100 gallons ÷ 13,127
.05550

10. ck#3060 - West Helena Water Utilities 10/18/76
Water Cost 674.45
Per 100 gallons ÷ 12,076
.05585

Mobil Chemical Company

CROP CHEMICALS GROUP

P.O. BOX 26683
RICHMOND, VIRGINIA 23261
TELEPHONE (804) 798-4291

January 24, 1977

Mr. R. A. Guidi
Vertac Incorporated
5100 Poplar Avenue, Suite 2414
Memphis, Tennessee 38137

Dear Ray:

Please be advised that upon our receipt on January 4, 1977 of a tank truck load of NBE under your invoice No. 2563, our total project to date take of NBE totaled 5,035,410 lbs. Therefore, we have satisfied our commitment under Appendix B, Section 3(b) last sentence whereby Mobil was to have taken delivery of 5MM lbs. of NBE by March 1, 1977.

Even though we got off to somewhat of a slow start, it would appear that since we achieved this 5MM lb. minimum target approximately 45 days earlier that the extra poundage in recent months has offset some of the previous negatives. This coupled with Mobil's current willingness to consider additional changes to the original contract which would provide Eagle River with relief in the area of escalating costs hopefully makes this arrangement much more attractive than perhaps your feelings were some six to eight months ago.

Mobil Chemical continues to be satisfied with the fine performance of your Eagle River plant in terms of throughput, yields, and timeliness of shipments. To this end please express our satisfaction to Bill Shackelford, John Miles, and the other individuals at Eagle River who are making it happen!

Very truly yours,

D. B. Faggert
Manager, Custom Manufacture

soe

cc: Mr. John J. O'Neill
Mr. J. W. Shackelford

JANUARY 7, 1977

EAGLE RIVER CHEMICAL CORP.

COMPUTATION OF (A-(B+C+D+E) x F

1976

JANUARY	(400,000 - (229,468 + 0 + 0)) x 0.123 =	$ 12,365
FEBRUARY	(400,000 - (366,746 + 0 + 0)) x 0.123 =	4,090
MARCH	(400,000 - (87,110 + 0 + 0)) x 0.123 =	38,485
APRIL	(400,000 - (328,327 + 0 + 0)) x 0.123 =	8,816
MAY	(400,000 - (287,325 + 0 + 0)) x 0.123 =	13,859
JUNE	(400,000 - (293,459 + 0 + 0)) x 0.123 =	13,105
JULY	(400,000 - (267,831 + 0 + 0)) x 0.123 =	16,257
AUGUST	(400,000 - (348,350 + 0 + 0)) x 0.123 =	6,353
SEPTEMBER	(400,000 - (448,468 + 0 + 0)) x 0.123 =	-0-
OCTOBER	(400,000 - (528,692 + 0 + 0)) x 0.123	-0-
NOVEMBER	(400,000 - (624,969 + 0 + 0)) x 0.123 =	-0-
DECEMBER	(400,000 - (632,349 + 0 + 0)) x 0.123 =	-0-
TOTAL		$113,330

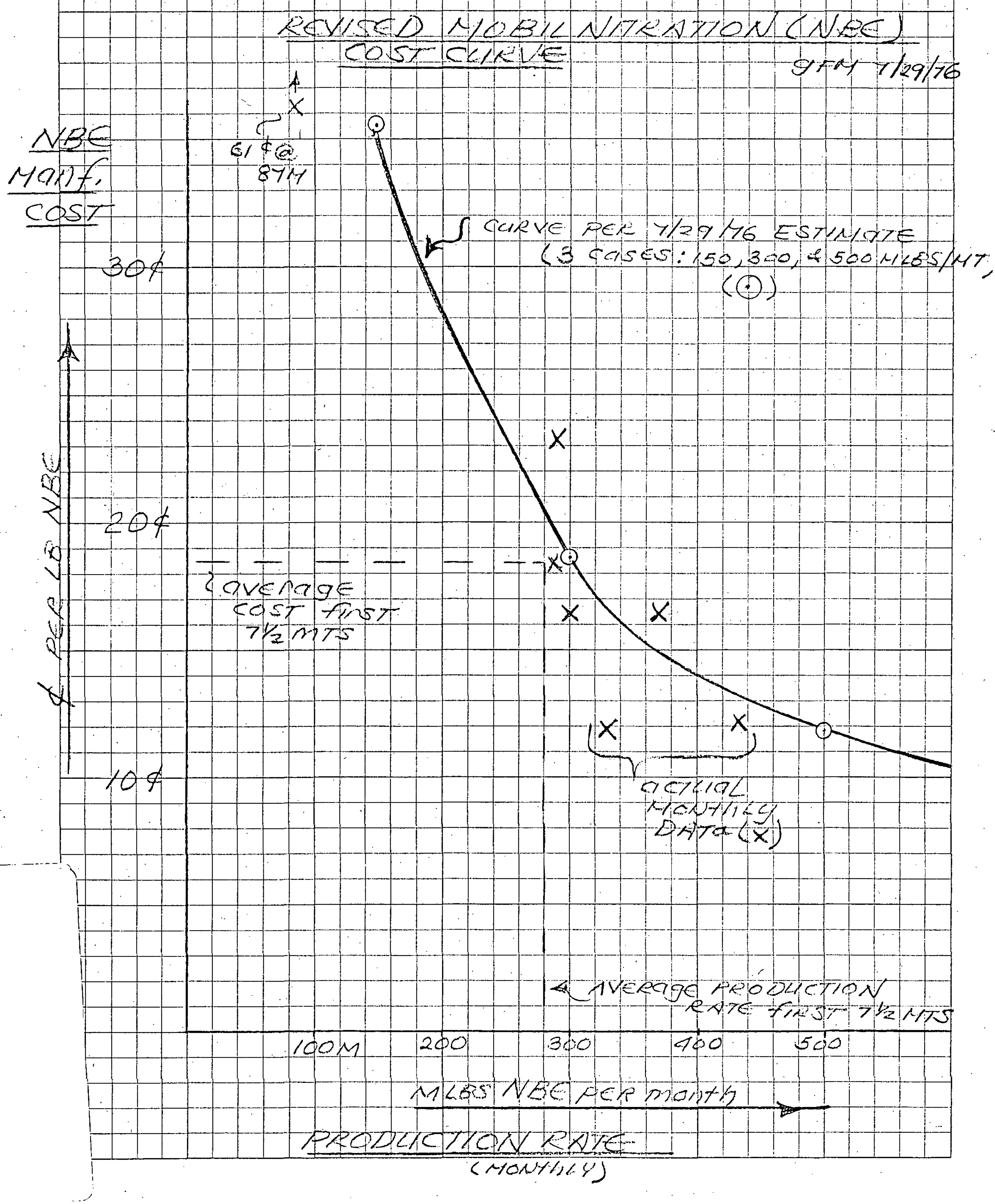
To BOB FABIAN 7/30/76

SUBJECT — MOBIL NBE

attached REVISED MOBIL COST CURVE, manufacturing cost estimate, & SUPPORTING NOTES. as the notes indicate BOTH HISTORICAL and estimated parameters HAVE BEEN used for this ESTIMATE. also attached is a MOBIL expansion TABLE outlining our suggested approach. I would like to understand MOBIL's BUSINESS philosophy before committing a more detailed study on the expansion. A BALLPARK Manf. COST for the 1MM LB/MT plant would BE about 8¢/#. again the COST CURVE would enter in WITH a COST of about 14¢/# at the .5MMLB/MT LEVEL WITH the larger plant. I BELIEVE the expanded plant would offer outstanding reliability & flexibility.

CC:
BILL Shackelford
JOHN Miles
George Mathes (2)

George



REVISED MOBILNITRATION (NBC) COST CURVE
9FM 7/29/76
NBC Manf. COST
¢ PER LB NBC
61¢ @ 87M
CURVE PER 7/29/76 ESTIMATE (3 CASES: 150, 300, & 500 MLBS/MT) (⊙)
30¢
20¢
10¢
average cost first 7½ MTS
actual monthly DATA (X)
AVERAGE PRODUCTION RATE FIRST 7½ MTS
100M
200
300
400
500
MLBS NBC PER month
PRODUCTION RATE (MONTHLY)

ESTIMATED MANUFACTURING COST — 9FM 7/29/76

REVISED MOBIL NITRATION (NBE)

*BASE CASE

1. PLANT PRODUCTION (ALL COST ARE ON UNIT BASIS)

BASIS: EXISTING facility 500 MLBS PER month NBE Capacity

	PLANT CAPACITY		
	150 MLBS	300 MLBS*	500 MLBS
	30 %	60 %	100 %

2. RAW MATERIAL & FUEL COST

Type	Units	Unit Cost	Usage /	$	$	$
TOLL CONVERSION Materials By MOBIL						
Subtotal, Raw Materials & Fuel				$	$	$

3. UTILITIES

Type	Units	Unit Cost	Usage* / # NBE	$/MT*	$	$	$
Electricity	KWH	2.8¢	.46	3864	SEE NOTES #6	.0129	SEE NOTES #6
Steam	LBS	.2¢	2.00	1200		.0040	
Water	Mgal	40¢	.002	240		.0008	
Nitrogen	SCF	.36¢	2.00	2160		.0072	
Waste disposal:							
aqueous	LBS	.5¢	1.00	1500		.0050	
organic	LBS	6.0¢	.01	180		.0006	
Subtotal, Utilities					$ .0427	$ .0305	$ .0259

	150 MLBS	300 MLBS	500 MLBS
4. OPERATING LABOR $+10m (2 operating spots)	$ .0704	$ .0352	$ .0211
5. ROYALTIES & RENTALS $		$	$
6. BURDEN			
A. Repair Labor $4.8M (4 MEN)	$ .0323	$ .0162	$ .0097
B. Repair Supplies 1.1 times R. LABOR	$ .0356	$ .0178	$ .0107
C. Operating Supplies 40% OPER. LABOR	.0282	.0141	.0084
D. Supervision 30% OPER LABOR	.0210	.0106	.0063
E. Indirect Payroll (IN LABOR)	$ —	$ —	$ —
Subtotal, Burden	.1171	.0587	.0351
7. FIXED AND SERVICE COSTS			
A. General Works Expense (+ $10M)	$ .0694	$ .0347	$ .0208
B. Depreciation $4800 per month	.0320	.0160	.0096
C. Laboratory ($3.4M)	.0228	.0114	.0069
D.			
Subtotal, Fixed & Service Costs	$ .1242	$ .0621	$ .0373
8. TOTAL BULK COST	$	$ —	$ —
9. LOADING, PACKING & SHIPPING			
A.			
B.	$ —	$ —	$ —
10. CONTINGENCIES	$	$	$
11. TOTAL MFG. COST	$ .3544	$ .1865	$ .1194

NOTES: * BASE ESTIMATE 300 MLBS/MT.

Form VAFE 6

Prepared by　　　　Checked by　　　　Date

MOBIL NITRATION
Manf. COST BASIS

①

ASSUMPTIONS

JFM 7/29/76

(1) BASE CASE 300 MLBS PER MONTH NBE PRODUCTION (60% CAPACITY).

(2) COSTS ARE DEVELOPED AS FORECAST OR BUDGET GRADE QUALITY BASED ON KNOWN OR ESTIMATED MANUFACTURING REQUIREMENTS.

(3) OUT of a total of four manufacturing PROCESS UNITS AT Eagle RIVER Chemical, three are assumed to BE in operation for this ESTIMATE. Because of MORE OR less equivalent staffing in each unit, NBE then requires one third direct operating staff.

(4) ITEM 3 TO TAKE CARE of So called "idle plant" charges. In other words in a given month where just one or two units would BE running, "idle plant" allocations would prevent distortation. However, Having three of four process units in operation would seem to BE fair recognition of THE RISKS & inefficiencies inherent with changeable TOLL operations.

(5) The first 7½ months of NBE operation represent a fair guide for predicting future costs. Cost reductions such as the completion of significant post startup changes, spare parts stocking, staff reductions / reallocations, etc. will BE

offset by increase in waste treatment (now zero) & continued maintenance in a corrosive nitration process, THUS HISTORICAL DATA IS USED WITH KNOWN & ESTIMATED PARAMETERS for the manufacturing COSTS. Propanil was operating OR absorbing costs for almost all of this time period

(6) UTILITIES

(a) A capacity factor exists for all UTILITIES. BASE Loading and/or a fixed portion is inherent WITH Each UTILITY component. FOR this estimate @ 300 M LBS/MT Base this factor is estimated at:

	capacity factor
150 M LBS/MT	1.4
300 M LBS/MT	1.0
500 M LBS/MT	.85

(B) ELECTRICAL

EST. Connected Horsepower is 469. At Base case of 300 M LBS NBE, estimated KW equals 188 (BATCH OPERATION). Price PER KWH is from 7/25/76 BILLING for MOBIL transformer. The resulting estimate of $3864/MT ELECTRICAL compares reasonably for JUNE actual ($3510 @ 293 M LBS NBE).

(C) STEAM

EST. Steam consumption is based on steam JET CONSUMPTION, STEAM tracing, & PLANT steam losses. EST. steam COST compares with actual June natural gas cost ($1200 estimate vs. actual June $1145)

(D) Nitrogen based on plus 15 SCFM for purged dp cells, other instrumen. & purges requiring Nitrogen, and misc. losses & line blowing. N_2 pric based on 7/13/76 billing and include a proration of \$900 N_2 tank renta. Estimated Nitrogen of \$2160 compares with actual June figure of \$1811.

(E) aqueous effluent quantity based on contaminated steam jet condensa less vapor loss plus washdowns and spills. Price of effluent treatment assumes minor activated carbon consumption, conventional biological treatment, & associated Eagle River treatment expenses. Organic wastes based on solids generated in process such as spent filter cartridges, etc. Neither cost is now recognized on current monthly cost page.

(7) <u>operators</u>

2 spots

(46.75 mn hrs/wk X 8 men X \$5.22/hr X 1.25 burden X 4.33 wks/

= \$10,567

(1/2 hr shower time + 42 hr week schedule for shift work and all @ straight time)

(8) <u>maintenance</u>

4 men allocated to MOBIL including instrumentation, electrical, machinist, pipefitter, & inefficiency

(43.75 mn hrs/wk X 4 X \$

(9) MAINTENANCE SUPPLY FACTOR (1.1) REFLECTS ⑪
PROCESS CORROSIVITY.

(10) OPERATING SUPPLIES which includes safety equals $4227 VERSUS $4300 for average of 4.5 mts. of OPERATION

(11) General PLANT includes safety personnel, security, purchasing, stores, engineering, accounting, secretarial, & administrative.

(Head count of 25 people X $1M/MT average SALARY X 1/3 allocation to MOBIL) = $8,333

- General plant expenses such as supplies, rentals, etc. assumed as 25% of labor — 2,083

$10,416

(12) Depreciation Based on actual Depreciation ($593 M capitalization).

(13) Laboratory. Direct technician labor estimated at 1/2 SPOT for MOBIL

(46.75 mn hrs/wk X 2 MEN X $5.22/HR X 1.25 BURDEN X 4.33 wks)
= $2642

PLUS 30% for chemist support activity ($791).

Estimated Lab cost compares WITH actual average for 7½ months of $3200.

(14) BUDGET COSTS VERSUS ACTUAL COSTS for FIRST 7½ MONTHS

	EST. a/ COST	AVERAGE B/ 7.5 MTS	
UTILITIES (W/O WASTE DISPOSAL)	$ 7464	$ 5160	(MORE DIRECT JUNE ALLOCATION, UTILITIES WERE $8682)
OPERATING LABOR (W BURDEN)	10567	8500	(EST. COST AT LATEST LABOR RATE & TOP OPERATOR WAGE CLASS)
MAINTENANCE	10180	10500	
SUPPLIES	4227	1300	
SUPERVISION & GEN. PLANT & ADMINS.	13586	14900	
DEPRECIATION	4800	~ 4800	
LABORATORY	3400	3200	
	$54,224	$51,360	
PLUS WASTE DISPOSAL	1,680		
TOTAL	$55,904		
UNIT COST	18.6 ¢/#	$ 18.34	

a/ 300 MLBS NBE/MT

B/ 280 MLBS NBE/MT

MOBIL NITRATION (NBE)
EXPANSION

9FM/7/29/76

LEVEL of EXPANSION	Monthly capacity MLBS	annual capacity MMLBS	capital req'D $M	additional expenses	REMARKS
CURRENT	450	+ 5	NONE	NONE	Unit requires shakedown at higher PRODUCTION LEVELS (SUSTAINED). Batch cycle times well documented.
I CURRENT ATTAINABLE	600	+ 7	0 – 25	add operator on days for tank trucks?	Requires slight increase in BATCH SIZE and high stream factor. PH control of NH_3 & EDC storage recommended But Not Essential.
II	800	+ 9.5	100 – 150	add operator on Days for tank TRUCKS (if not above)	Requires additional 3.5 M gal SS REACTOR to allow separate phase separation & neutralization thus freeing nitration reactor. add additional NBE storage.
III	1000	12	250 – 400	- add operator on swing shift for tank trucks - add day supervisor for MOBIL unit	Requires conversion of 3.5 M gal SS reactor (per above) to Nitration service including two acid mix. Bottles & their pumps, weigh cell & reactor interlocks, heat exchanger for reactor cooling etc. Add CBE storage tank, enlarge spent acid & am. sulfate storage all to 20 M gal. add BUILDING structure & roof annex for reactor. add 2nd refrigeration UNIT and 2nd cooling tower. Convert NBE storage (current) to crude NBE/EDC surge. Feed STRIPPER semi-continous "ala" MOBIL NBE process from this converted tank

Phone: (501) 572-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

JANUARY 13, 1976

MR. D. B. FAGGERT
MOBIL CHEMICAL
P. O. BOX 26683
RICHMOND, VIRGINIA 23261

DEAR MR. FAGGERT:

PLEASE REFER TO DRAFT AMENDMENT TO OUR AGREEMENT OF SEPTEMBER 1, 1975 MAILED TO YOU ON JANUARY 10, 1977 BY MR. JOHN J. O'NEILL.

ON THE LAST PAGE OF THIS DRAFT IT WAS OUR INTENTION TO USE 0.83 LBS. OF 95% CBE PER POUND OF 83% CBE INSTEAD OF THE 0.825 AS WRITTEN. WE WOULD APPRECIATE YOUR MAKING THIS CORRECTION ON YOUR COPY.

THANK YOU VERY MUCH.

SINCERELY,

J. W. Shackelford

J. W. SHACKELFORD

JWS/BR

CC: J. J. O'NEILL
JOHN MILES

YTD savings on R.M. to Mobil for underconsumption

(1) CBE @ ~ 2^{00}/lb

$(2,278,416 \text{ lb NBE})(.008 \text{ lb CBE/lb NBE})(2^{00}) =$ \$36455

(2) HNO_3 @ ~ \$190/ton

$(2,278,416)(.025)\left(\frac{190}{2000}\right) =$ \$5411

(3) H_2SO_4 @ ~ \$60/ton

$(2,278,416)(.025)\left(\frac{60}{2000}\right) =$ \$1709

(4) EDC @ ~ 15¢/lb

$(2,278,416)(.025)(.15)$ \$8544

(5) NH_3 @ ~ \$125/ton

$(2,278,416)(.006)\left(\frac{125}{2000}\right)$ \$854

(6) Total \$52973

(7) \$50000 x 12/8 = \$75000 per year
or about 1.5 – 2.5¢/lb NBE

40 wt% CBE

1 lb (EDC/CBE) = 0.4 lb CBE = 0.04011 GAL

0.6 lb EDC = 0.06113 GAL

0.10124 GAL

$$\#/GAL = \frac{1}{.10124} = 9.8775$$

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP
SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137

Copy for
Mike
John M
George

INTER-OFFICE CORRESPONDENCE

DATE: October 19, 1976

TO: J. W. Shackleford

FROM: J. J. O'Neill

SUBJECT: MOBIL NBE CONTRACT

REPLY REQUESTED BY (DATE)

Don Faggert of Mobil agreed to consider amending the NBE contract of 9/1/75 as follows:

1. Renew for three years, effective January 1, 1977.

2. Establish new fee based on Eagle River's costs including a reasonable return on investment.

3. Establish a basis for compensation when output is "low" not due to Eagle River's performance.

4. Provide a temporary adjustment to the on-going fee to reimburse Eagle River for losses under the present contract (1975 and 1976), for which it is mutually agreed that such loss was caused by Mobil, or is otherwise unreasonable.

Mobil has requested that we submit a proposal by October 29. To do so we must have the following information from you by October 25.

1. The fee requested by Eagle River for manufacture of 400,000 to 500,000 pounds per month. This should include all applicable costs and the profit required to provide a reasonable return on the investment. Please provide cost calculation to support your recommendation.

2. Your recommendations as to what compensation adjustment should be made to protect us from incurring losses due to failure on Mobil's part to take anticipated amount of NBE. This could be a "floor" payment for fixed expenses when production is interrupted for causes not due to Eagle River's failure and/or for low production. I believe that Mobil would prefer that we set the fee to provide a reasonable profit over a range of probable outputs with provision for some type of base fee to protect us from disaster.

   Possibly an approach that we might consider is a sliding fee based on output, but I do not believe this is a mechanism that Mobil would agree to. It is worth trying, however.

3. Mobil is willing to hear how we incurred losses or low profitability on the existing contract. They do not want us to suffer for problems they have caused, or in fact, for errors in judgement made by Eagle River in establishing the compensation rate for the existing contract. This requires a very carefully documented statement. It should analyze our contract as to exceptions and results. I believe Mobil will be willing to give where unusual circumstances created by them caused a loss, such as, last March when production fell below 100,000 pounds. I believe they will listen to problems we created by miscalculating the capital investment or other significant costs. If they agree to share some of the burden we will get a temporary rate for 1977 to permit us to recoup the loss.

A key to getting consideration from them is the fact that Eagle River has performed well and that it has a capability of providing expansion to 12,000,000 pounds for an investment less than $500,000.

J. J. O'Neill

JJO/gn

cc: R. A. Guidi
L. E. Harcrow

Phone: (501) 572-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

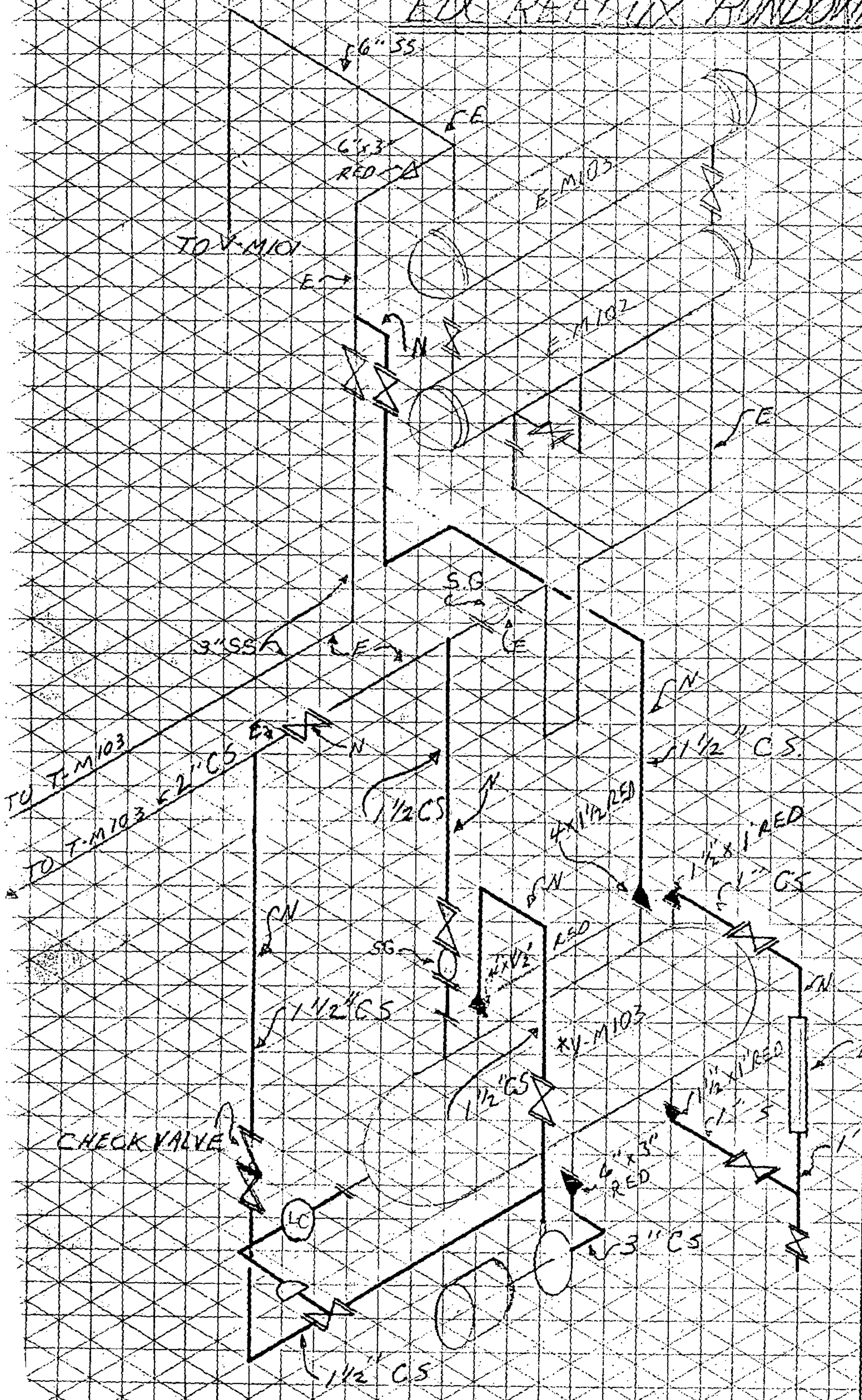
OCTOBER 14, 1976

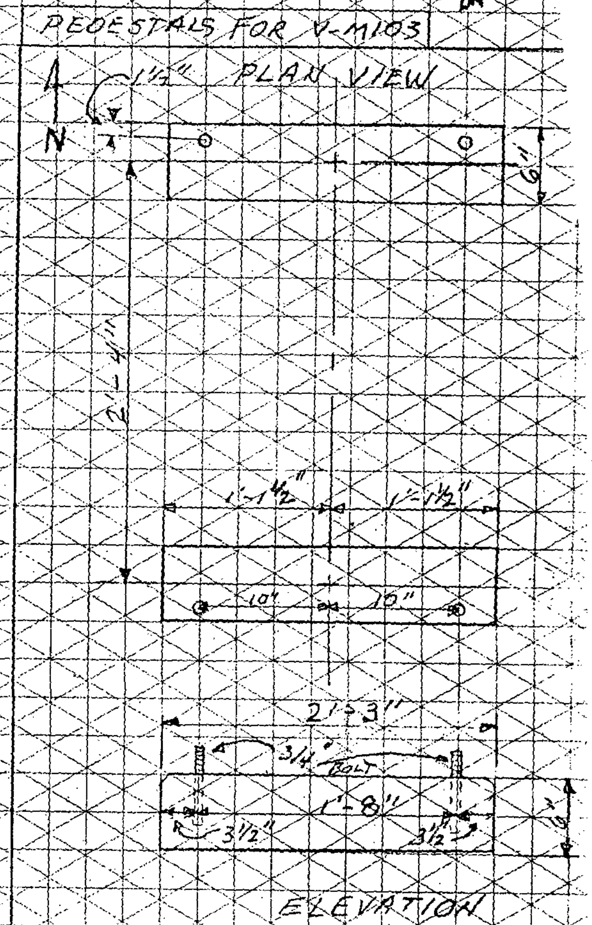
TO: MR. SIL LUTKEWITTE
FROM: BILL SHACKELFORD

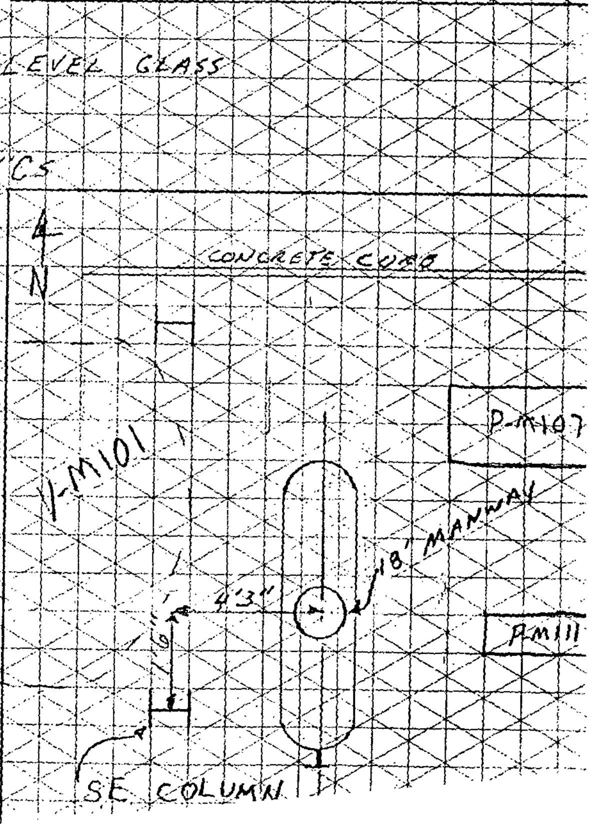
SUBJECT: NBE-EAGLE RIVER

MONTH	PRODUCTION (LBS)	SHIPMENT (LBS)	UNIT COST TO PRODUCE
NOV. 75	437,356	401,580	.121
DEC. 75			
JAN. 76	299,468	309,240	.180
FEB. 76	366,746	331,880	.187
MAR. 76	87,110	121,580	.614
APR. 76	328,327	219,560	.119
MAY. 76	287,325	323,260	.146
JUNE 76	293,459	352,920	.232
JULY 76	267,831	243,020	.248
AUG. 76	348,350	365,160	.175
SEPT 76	448,468	365,160	.103
TOTAL	3,164,440	3,033,360	

EDC REFLUX RUNDOWN







N- NEW LINES
E-EXISTING LINES

ALL NEW PIPING TO BE CS

* V-M103 IS

copy to ... Mike George

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP

SUITE 2414 • 5100 POPLAR • MEMPHIS, TN 38137 • 901-767-6851 • TELEX 53927

January 10, 1977

Mr. D. B. Faggert
Mobil Chemical
P. O. Box 26683
Richmond, Virginia 23261

Dear Mr. Faggert:

Attached for your consideration is a draft amendment to our agreement of September 1, 1975. For the most part we have adopted the form and content proposed by you in your draft of December 17, 1976.

We have filled in the numbers which we believe are appropriate for the escalation formula of Appendix B, and adjusted Appendix D yields to reflect 1976 experience which I believe is appropriate. I have also redrafted the formula for fees due Vertac should our production be below 400,000 pounds in any month. I did not know how to apply the formula you proposed but I do believe the attached now meets our mutual requirements.

Other changes, are outlined for your convenience and I believe are self explanatory.

We are disappointed to note that you are not interested in paying us for an option to expand the capacity of the facility as I proposed in my letter to you of November 5, 1976. As you know I was requesting an option fee, partly to mitigate the financial penalties we suffered as a result of receiving less than the planned amount of CBE during a significant period of the agreement. It was forecast that a production of NBE in the 400,000 to 500,000 pound range would commence March 1, 1976. It did not reach this output level till September 1976. I would like to ask that the penalty formula proposed for the amendment be applied retroactively for the period March 1, 1976 to September 1, 1976 and that the fee due be paid to us at a rate of 1 cent per pound of NBE delivered to you commencing January 1, and that it be paid until the full penalty is recovered.

Sincerely,

VERTAC CONSOLIDATED, INC.

John J. O'Neill
Vice President of Planning & Development

JJO/sl

Attachment

January 3, 1977

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Dear Mr. Faggert:

Reference is made to the Agreement between our two companies dated September 1, 1975 relative to the manufacture of NBE "Agreement". It is hereby mutually agreed to amend the aforesaid Agreement in the following manner effective January 1, 1977.

Delete last sentence Section 3.

Section 8 is deleted and replaced with the following:

> "8. The parties agree that the yields to be achieved by the Contractor will be the yields set forth in Appendix D attached hereto. If the average yield with respect to any of the Materials during any calendar quarter is below those set forth in Appendix D, Contractor will give Mobil the opportunity to review Contractor's operations and will cooperate fully with Mobil in attempting to increase yields. If, within such period of time as Mobil deems reasonable, the yields have not reached the levels set forth in Appendix D, Mobil, without any liability, may terminate this contract on written notice to Contractor."

Section 12 is deleted and replaced with the following:

"12. To the extent that Mobil makes available Materials in accordance with the terms of this Agreement, the Contractor, beginning on January 1, 1977, shall manufacture and deliver to Mobil such quantities of NBE as are ordered by Mobil, provided that the Contractor shall not be obligated to supply more than 500,000 pounds during any calendar month without its prior written consent."

Section 20 is deleted and each subsequent section is renumbered accordingly.

Delete from original section 21, now Section 20, "....and paragraph 3 (a) of Appendix B."

The original section 25 (now section 24) is deleted and replaced with the following:

"24. The term of the Agreement as amended herein, shall commence effective January 1, 1977, and shall terminate on December 31, 1979 unless extended pursuant to the next sentence or terminated pursuant to section 20 or Appendix B. Mobil, on written notice delivered to Contractor not later than September 30, 1979 may extend the term of this Agreement through December 31, 1980 and Mobil, in the event this Agreement is extended thru 1980, on written notice delivered to Contractor not later than September 30, 1980 may extend the term of this Agreement through December 31, 1981."

The following is added to the Agreement as section 26:

"26. Contractor will not sell or convey any interest in its facilities for the manufacture or NBE except in a bona fide, arm's length, cash sale of all said facilities and after first having given Mobil the opportunity to purchase said facilities for the price and on the terms and conditions available from the prospective purchaser. Contractor will notify Mobil in writing of the identity of the prospective purchaser and the price and terms and conditions offered by it. Mobil will have 30 days after receipt of said notice to exercise its right of first refusal by purchasing the facilities for such price and on such terms and conditions, provided, however, the foregoing shall not apply to any proposed sale of all or substantially all the assets of Eagle River Chemical Corporation, or all or substantially all of the Stock of Eagle River Chemical Corporation."

Appendix B attached to the Agreement is deleted and replaced with the Appendix B attached hereto. Appendix D attached hereto shall become Appendix D to the Agreement.

All other terms and conditions of the Agreement shall remain in full force and effect as written.

Please signify your acceptance of the above by signing in the space provided below and returning one copy to Vertac, Inc., Memphis, Tennessee, 38137, Attention of John J. O'Neill.

Very truly yours,

VERTAC, INC.

By: ______________________________

Title: ______________________________

Date: ______________________________

Accepted:

MOBIL CHEMICAL COMPANY

By: ______________________________

Title: ______________________________

Date: ______________________________

APPENDIX B

1. Mobil shall pay Contractor $0.170 per pound of NBE, F.O.B. West Helena, Arkansas delivered hereunder which meets the specifications set forth in Appendix A.

2. With respect to each calendar month in which Vertac produces less than 400,000 pounds of NBE for Mobil's Account, Mobil, within 45 days after the end of that month, will pay Contractor any amount which results from the following calculation:

(A- (B + C + D + E)) x F = amount payable*

Where:

A = 400,000

B = number of pounds of NBE manufactured for Mobil's account in that month.

C = number of pounds of NBE which Contractor failed to produce in that month due to consumption of CBE in excess of that set forth in Appendix D.

D = the number of pounds which Contractor reasonably should have produced in said month from the CBE supplied at the yields set forth in Appendix D but did not produce for reasons not excused by section 18 and not covered by C above.

E = the number of pounds not produced for Mobil's account in said month due to circumstances described in section 18 provided, however, that failure on the part of Mobil to deliver sufficient raw material to permit Vertac to produce 400,000 pounds of NBE in any calendar month, based on yields set forth in Appendix D, shall not be excused for any reason including those set forth in said section 18. The factor E shall be determined by prorating 400,000 pounds for the period in said month during which either party is excused from manufacturing or receiving NBE for any reason set forth in section 18.

F = $0.123

* in no event shall the amount payable be a negative number as a result of the sum of C, D and E, exceeding B.

3. Amounts paid by Mobil pursuant to paragraph 2 above in any calendar year will be credited by Contractor to Mobil at a rate of $0.123 per pound for all pounds of NBE produced in excess of 6,000,000 pounds in said calendar year. Said credit will be rendered at the end of such calendar year.

4. The fee payable pursuant to paragraph 1 above with respect to deliveries in each calendar quarter will be increased or decreased, as the case may be, by the cumulative effect of the following:

   a. For each increase or decrease of $0.10 per hour, off a base of $5.12 per hour, in the wage rate of lead operators employed at Contractor's West Helena, Arkansas facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0012 per pound, fractions in proportion.

   b. For each increase or decrease of $0.01 per KWH, off a base of $0.028 KWH, in the power rate payable at Contractor's said facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0046 per pound, fractions in proportion.

C. For each increase or decrease of $0.10/M lbs., off a base of $2.00/M lbs., in the weighted average cost of steam at such facilities during the immediately preceding calendar quarter, the fee will be increased or decreased by $0.002 per pound, fractions in proportion.

Contractor shall maintain, for a period of one year after the period to which they relate, all records relating to the fee adjustments referred to in this paragraph. Mobil, on 15 days advance written notice, may inspect Contractor's records for the purpose of determining the appropriateness of any fee adjustment proposed by Contractor. If Mobil disputes such adjustment and the parties are unable to resolve such dispute then Arthur Young and Company shall be given access to Contractor's records relating to the disputed adjustment and the determination of Arthur Young and Company with respect to the dispute shall be conclusive and binding on the parties. If Arthur Young and Company determines that the adjustment proposed by Contractor is appropriate, then Mobil will pay for the services rendered by Arthur Young and Company, otherwise Contractor shall pay for such services.

5. In the event governmental action or inaction prevents or substantially impedes Mobil's manufacture or sale of the herbicide which it produces from NBE, Mobil may terminate this Agreement on 30 days written notice to the Contractor.

6. Contractor on 30 days written notice to Mobil may terminate this Agreement if Mobil does not take delivery of 4,800,000 pounds in calendar year 1977 or in calendar year 1978.

APPENDIX D

TO AGREEMENT

BETWEEN MOBIL CHEMICAL COMPANY

AND

EAGLE RIVER CHEMICAL CORPORATION

MADE AS OF

1 JAN. 1977

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:

95% CBE	-	~~0.825~~ .83 lb.
EDC	-	0.095 lb.
H_2SO_4	-	0.845 lb.
HNO_3	-	0.340 lb.
NH_3	-	0.050 lb.

Phone: (501) 572-3701

P. O. Box 2648

Eagle River Chemical Corp.

Highway 242

WEST HELENA, ARKANSAS 72390

June 30, 1976

To: Bob Fabian

Subject: MOBIL NBE & CBE

Attached memo of telecon John Miles & Don Faggert on 6/22/76, regarding Mobil NBE & CBE prospects. Also attached is a "quickie" ball park estimate of cases for Mobil expansion generated by myself for Ray Guidi on 1/15/76. John Miles & I still feel the 1/15/76 estimate is representative of today's Mobil NBE operation. My only hedge today is that of "logistics" in handling raw materials & product at higher volumes. Even here, however, our experience has been quite good with Mobil & our other suppliers. Additionally the NBE storage tank was recently enlarged from 6m gals to 12m gals. Then as stated in the 1/15/76 note, Eagle River Chemical should have NBE capability to +7 million lbs/yr NBE with the existing facility. Also as indicated in the note, by the addition of a separate phase separation & neutralization vessel & additional tankage, +9.5 million lbs/yr of NBE could be produced. The separate vessel removes a substantial portion of the "critical batch cycle time" from the nitration reactor while the additional tankage is again for logistics. As noted ballpark cost is in the $100m range. Further refinements are possible in the Mobil Unit in the area of increased acid addition rate, marginal payload increases, etc.. In summary, Eagle River has the capability of taking on additional NBE production

In the area of CBE production, Eagle River would enthusiastically entertain the possibility of producing CBE in conjunction with NBE. As everyone is aware, lack of CBE is our biggest problem for effective operation & profitability on our investment. Hopefully, with past experience and a joint effort with Mobil, Eagle River could improve on past CBE performance. Several comments on CBE manufacture

(a) The NBE plant was laidout for the possibility of CBE facility. The plot area south of NBE has been "reserved" for such a facility with pipe racks & utility lines sized to meet such a contingency.

(b) The Basalin plant may in fact meet many of the CBE requirements (multiple storage tanks, chlorination ability, etc.) should this facility be available on a part or full time basis.

In short, Eagle River feels that it has something to offer Mobil for increased NBE offtakes and/or alternate CBE manufacture.

Lastly, Eagle River proposes two additions to the present Mobil NBE unit that should show good payback & improved operation:

(1) pH control of ammonium hydroxide neutralization
(2) Ethylene dichloride storage facilities

pH control revisions would involve the addition of a flow thru pH cell with proper auxiliary equipment such as a filter, flow indicator, associated piping, etc.. The cell would be located in a slip stream of the circulating crude NBE/EDC to be neutralized. The pH element would transmit a signal to a controller & then a control valve in the aqua ammonia feed line. Based on a scope installation cost of $5m, we would estimate a ballpark payback of 4 to 6 mts. assuming a 10 to 15% reduction in ammonium sulfate volume versus the present mode of "manual" neutralization. Ammonium sulfate is now trucked offsite for disposal at a rate estimated at 500,000 gals/yr & an estimated fee of 20¢/gal.

An EDC storage tank would allow tank truck or tank car shipments of EDC versus drums. The estimated cost for a 20m gal carbon steel storage tank, a pump, level instrumentation & all associated piping, concrete/foundations, etc. is $20,000. Based on a 4¢ per lb savings on bulk versus drums, payback of 12 mts. is estimated. Payback calculation assumes 500,000 lbs/year of EDC consumed. Both these revision improve overall NBE "logistics" as discussed in the opening paragraph.

We would appreciate your review & carry through of these comments to Mobil Chemical.

Your truly,

George F. Mather

George F. Mather

GFM/br

attachments

cc: Bill Shackelford
Larry Conaway/Joe Porter
Dicky Hill
John Holcomb
John Miles
Ray Guidi

FLOY

7/15/76

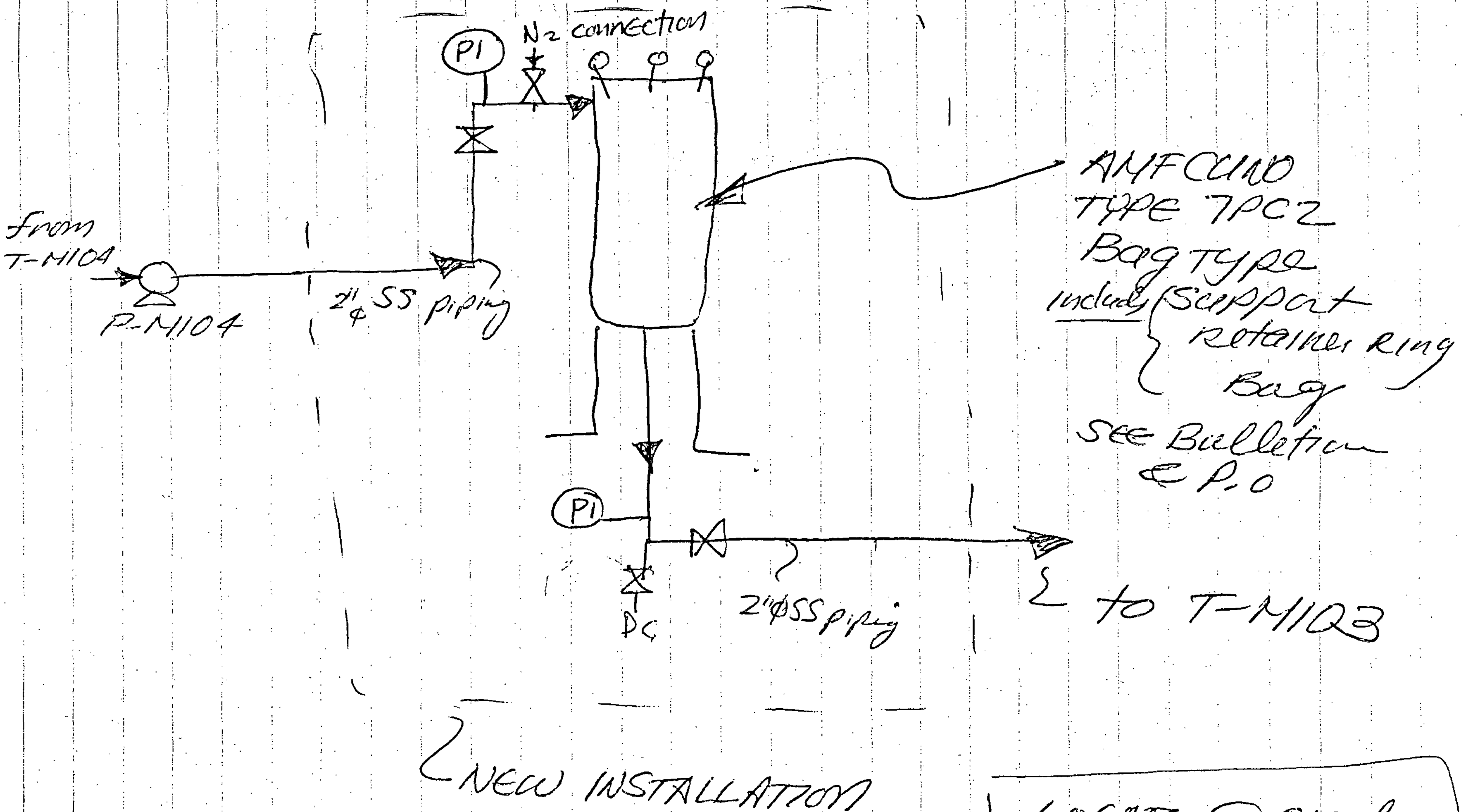
attached Data for
DM. Sulfate filter
for MOBIL Initiation
(Between EDC transfer
from T-M104 → T-M103)

— prepare location dwgs
& ISO's for construction

— review location & dwgs
with John Miles & operators

CC: John Miles
John Holcomb
Ocky Hill

EDC FILTRATION



LOCATE @ grade for access

Remove old strainer setup

7/20/76

MOBIL NITRATION NOTES for COST EVAL

① OVERHEADS ARE CURRENTLY BEING SPLIT TWO WAYS BETWEEN LANNATE & MOBIL. HOPEFULLY, PROPANIL & BASALIN WILL PROVIDE A FOUR WAY SPLIT. FOR COST EVALUATION SUGGEST 30% AS A REASONABLE SPLIT OVER THE LONG HAUL.

② A SUPPLEMENTAL SUMMARY OF MOBIL COSTS IS ATTACHED FOR NOVEMBER THRU MARCH.

SEE ATTACHED #1

③ TOTAL NBE COST SINCE STARTUP IS \$.18 /# * AT AN AVERAGE RATE OF 280 M#/D. AVERAGE COSTS BY CATEGORY ARE SHOWN IN THE ATTACHED (BREAKDOWN BY MY GUESTIMATE).

SEE ATTACHED

④ FACTORS WHICH COULD EFFECT COSTS UP OR DOWN:

- 5 & 2 PRODUCTION SCHEDULE FOR LOW VOLUME PERIODS
- MOBIL SHOULD BE NEARING END OF SPARE PARTS STOCKING, POST STARTUP CHANGES, ETC. (SIGNIFICANT MAINT. COSTS)
- ER STAFF REDUCTION & ALLOCATION OF MAINTENANCE PERSONNEL TO CAPITAL CONSTRUCTION PROJECTS

* EST. \$.14 /# PER RITABIAN / average based on

+ MOBIL is a filtration with corrosives. Experience shows a higher level of maintenance than Product 10 (pump seals, corrosion of carbon steel portions of process, etc.)
+ Waste treatment expenses (now zero)

(5) BOB'S SUMMARY SHOULD actually HAVE BEEN figured FOR an average Rate of 280 M #s/MT. HIS ORIGINAL GRAPH SHOWED us wanting to charge 24¢/# at THIS Level & producing the same for 14¢/#. Therefore, our performance to date is 4¢/# (18¢ vs 14¢) over original forecast. Conversely our fee is now just 16¢/#. Instead of making, we're losing money with all yields under forecast & high quality product!

See attached #3

#/

MOBIL NITRATION MANUFACTURING COST

DESCRIPTION OF CHARGES	NOVEMBER THRU-DECEMBER	JANUARY	FEBRUARY	MARCH	TOTAL
Wages Supervisors	7578.57	3461.73	2562.96	2606.62	16,209.
Wages Production	9561.71	5818.32	7858.43	6902.83	30,141.
Wages Maintenance	497.07	2226.83	4443.11	2107.40	9,274.
Power & Utilities	4579.21	6930.48	4533.66	3479.66	19,523.
Supplies	7811.29	4313.91	2964.25	3482.22	18,571.
Miscellaneous	1380.84				1,380.
Maintenance Supplies			2748.79	4962.10	7,710.
ALLOCATED BURDEN	21,424.93	26,850.15	35,706.29	29,952.57	113,933.
TOTAL CHARGES	52,833.62	49,601.42	60,817.49	53,493.40	216,745.
LBS. NBE PRODUCED	437,356	299,468	366,746	87,110	1,190,68
PER LB. COST	.1208	.1656	.1658	.6141	.1820

John Miles
George [illegible]
Jim [illegible]

#2

ESTIMATED

AVERAGE MONTHLY MOBIL *

[illegible]

(BASIS — 7.5 MONTHS & 2 MONTHS NBE)
(NOVEMBER 75 — JUNE 76)

	AVERAGE	ORIGINAL ESTIMATE (RMF)*
UTILITIES	$5600	
OPER. LABOR	6800	
MAINT.**	10500	
SUPPLIES	1300	
SUPERVISION	2900	
FIXED & SERVICE	20,000	
(DEPRECIATION ESTIMATE $4800 PER MONTH INCLUDED PLUS LNB EXPENSE of $3200)		
TOTAL	$+ 50 M	$ 39M *
	~18¢/#	~14¢/# *

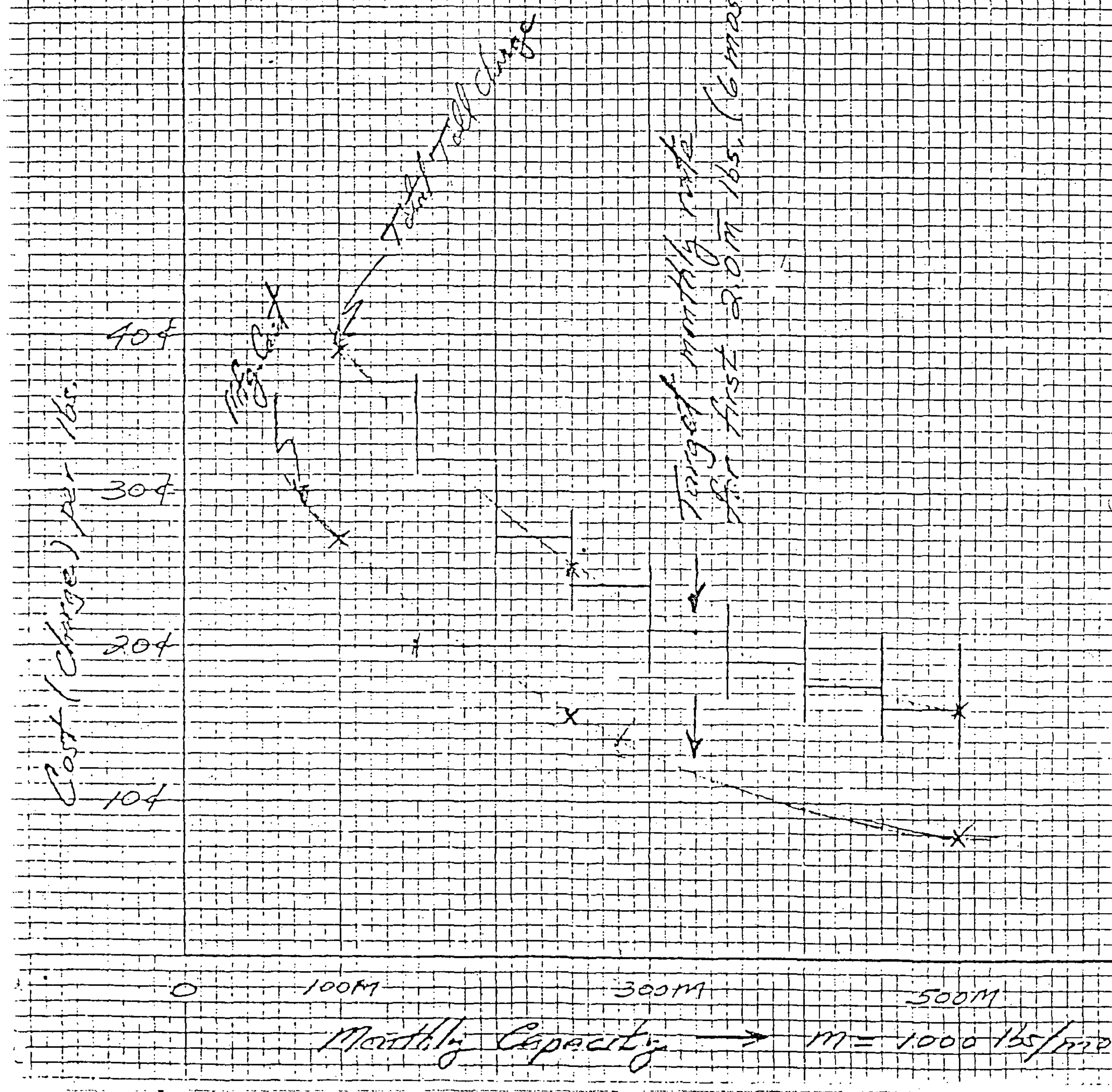
RMFabian COST CURVE 6/30/75

* 280 MLBS/MT — FACTORED from 320MLBS/MT

** includes $/MT NOVEMBER THRU MARCH allocated

Mobil Nitration Proposal

R. Fabian 6/30/75



Monthly Capacity M#	Total Toll Chg.
100-149	37¢
150-199	32¢
200-249	27¢
250-299	24¢
300-349	21¢
350-399	19¢
400-449	17.5¢
450-500	16¢

Mobil Metration Contract

R. Fabia[illegible] 7-19-7[illegible]

Summary of Actual Costs vs. Estimated

Actual Operating Costs (Total Monthly Dollars)

9E11 ESL	(1) Original Estimate (RMF)	(2) Avg Mo. @ 320M #/mo.	April '76 (3)	May '76 (3)	June '7[illegible]
Utilities	2560	5120	5218	8991	866[illegible]
Oper Labor	8640	8000	8272	6675	521[illegible]
120% Maint	63 5440	56 4480	85 7029	71 11,369	24,23[illegible]
20 Oper Supplies	31 3200	64 5120	71 2380	71 6059 (4)	75 501[illegible]
10 Supervision	31 3200	56 4480	21 2221	20 2013	71 161[illegible]
Fixed + Service					
60 Gen. Works / Deprec.	11,160 74%		10,958 (5) 75%	14,401 (5) 115	19,47[illegible] 25[illegible]
40 Lab.	12 1000		31 3080	33 3495	47 323[illegible]
Subtotal	9600	30,720	14,038	17,896	22,709
Total Cost	35,200	57920	39,158	52,473	68,06[illegible]
Unit Cost	0.11	0.181	0.119	0.183	0.23[illegible]
Production	320,000	320,000#	328,327	287,325	293,45[illegible]
Unit w/o F+S	0.08	0.085	0.077	0.120	0.15[illegible]

Deprec. 4794 / NBE

17994 Inc Prof 76

Notes: 1. EST. dtd. 6/30/75 @ 320,000 #/mo. level

2. Represents actual oper. from start-up @ late [illegible] thru March '76

3. Incl. "other" shown as direct mfg. cost

4. Total of "stores + receiv." + "safety + securit[illegible]"

5. Incl. "general plant" + "administration"

300 gal

304 SS

Tank Product 10

3 Dia X 6 ft

CLEMENTS & ASSOCIATES
Filters—Mixers—Pumps
Memphis, Tennessee
(901) 458-3302

John M.

January 3, 1977

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Dear ~~Don:~~ Mr. Faggert:

Reference is made to the agreement between our two companies dated September 1, 1975 relative to the manufacture of NBE. It is hereby mutually agreed to amend the aforesaid Agreement in the following manner effective January 1, 1977.

Section 8 is deleted and replaced with the following:

"8. "The parties agree that the yields to be achieved by the Contractor will be the yields set forth in Appendix D attached hereto. If the average yield with respect to any of the Materials during any calendar quarter is below those set forth in Appendix D, Contractor will give Mobil the opportunity to review Contractor's operations and will cooperate fully with Mobil in attempting to increase yields. If, within such period of time as Mobil deems reasonable, the yields have not reached the levels set forth in Appendix D, Mobil, without any liability, may terminate this contract on written notice to Contractor."

Section 12 is deleted and replaced with the following:

"12. To the extent that Mobil makes available Materials in accordance with the terms of this Agreement, the Contractor, beginning on January 1, 1977, shall manufacture and deliver to Mobil such quantities of NBE as are ordered by Mobil, provided that the Contractor shall not be obligated to supply more than 500,000 ~~6,000,000 pounds~~ during any calendar MONTH ~~year~~ without its prior written consent."

Section 20 is deleted and each subsequent section is renumbered accordingly.

Delete from Section 21 "and paragraph 3 (a) of Appendix B."

The original section 25 (now section 24) is deleted and replaced with the following:

" 24. The term of this Agreement shall commence on the date first written above and shall terminate on December 31, 1979 unless extended pursuant to the next sentence or terminated pursuant to section 20 or Appendix B. Mobil, on written notice delivered to Contractor not later than September 30, 1979 may extend the term of this Agreement through December 31, 1980 and Mobil, in the event this Agreement is extended thru 1980, on written notice delivered to Contractor not later than September 30, 1980 may extend the term of this Agreement through December 31, 1981."

The following is added to the Agreement as section 26:

"26. Contractor will not sell or convey any interest in its facilities for the manufacture of NBE except in a bona fide, arm's length, cash sale of all said facilities and after first having given Mobil the opportunity to purchase said facilities for the price and on the terms and conditions available from the prospective purchaser. Contractor will notify Mobil in writing of the identity of the prospective purchaser and the price and terms and conditions offered by it. Mobil will have 30 days after receipt of said notice to exercise its right of first refusal by purchasing the facilities for such price and on such terms and conditions. Notwithstanding the provision of this section, Vertac shall not be obligated to give Mobil the opportunity to purchase said facilities if the sale of said facilities are a part of transaction in which Vertac sells all or substantially all the assets or all of substantially all of the stock of the Eagle River Chemical Corporation to a second party."

Appendix B attached to the Agreement is deleted and replaced with the Appendix B attached hereto. Appendix D attached hereto shall become Appendix D to the Agreement.

All other terms and conditions of the Agreement shall remain in full force and effect as written.

Please signify your acceptance of the above by signing in the space provided below and returning one copy to Vertac, Inc., Memphis, Tennessee 38137, attention of John J. O'Neill.

Very truly yours,

VERTAC, INC.

By: ______________________________

Title: ______________________________

Date: ______________________________

Accepted:

MOBIL CHEMICAL COMPANY

By: ______________________________

Title: ______________________________

Date: ______________________________

APPENDIX B

1. Mobil shall pay Contractor \$0.166 per pound of NBE delivered hereunder which meets the specifications set forth in Appendix A.

2. With respect to each calendar month in which Vertac produces less than 400,000 pounds of NBE for Mobil's Account, Mobil, within 45 days after the end of that month, will pay Contractor any amount which results from the following calculation:

   (A - (B + C + D + E)) x F = amount payable*

   Where:

   A = 400,000

   B = number of pounds of NBE manufactured for Mobil's account in that month. (less than 400

   C = number of pounds of NBE which contractor failed to produce in that month due to consumption of CBE in excess of that set forth in Appendix D.

   D = the number of pounds which contractor reasonably should have, produced from the CBE supplied at the yields set forth in Appendix D but did not produce for reasons not excused by section 18.

   E = the number of pounds not produced for Mobil's account in said month, ~~on Mobil's instruction~~ due to circumstances described in section 18 providing, however, that failure on the part of Mobil to deliver sufficient raw material to permit Vertac to produce 400,000 pounds of NBE

400,000 # prorated over month

in any calendar month, based on yields set forth in Appendix D, shall not be excused for any reason including those set forth in said section 18.

F = $0.123

* in no event shall the amount payable be a negative number as a result of the sum of C, D and E, exceeding B.

3. Amounts paid by Mobil pursuant to paragraph 2 above in any cal yr will be credited by Contractor against ~~future~~ invoices in that yr at a rate of $0.123 per pound for all pounds of NBE in excess of ~~1,500,000~~ 6,000,000 pounds ~~taken in any three consecutive calendar months~~ produced in said year. Said credit will be ~~applied against the first invoice(s) to be~~ rendered after the end of ~~such three-month period.~~ the cal yr

4. The fee payable pursuant to paragraph 1 above with respect to deliveries in each calendar quarter will be increased or decreased, as the case may be, by the cumulative effect of the following:

   a. For each increase or decrease of $0.10 per hour, off a base of 5.12 per hour, in the ~~weighted average~~ wage rate of ~~hourly employees~~ lead operator at Contractor's West Helena, Arkansas facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.00~~07~~12 per pound, fractions in proportion.

2.9%

   b. For each increase or decrease of $0.01 per KWH, off a base of 2.8¢/KWH, in the _____ power rate payable at Contractor's said facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0046 per pound, fractions in proportion.

$.013/lb
$.0176/lb

13.85

c. For each increase or decrease of $0.10/M lbs., off a base of 2.00/M lbs., in the weighted average cost of steam at such facilities during the immediately preceding calendar quarter, the fee will be increased or decreased by $0.~~0003~~ .0002 per pound, fractions in proportion.

Contractor shall maintain, for a period of one year after the period to which they relate, all records relating to the fee adjustments referred to in this paragraph. Mobil, on 15 days advance written notice, may inspect Contractor's records for the purpose of determining the appropriateness of any fee adjustment proposed by Contractor. If Mobil disputes such adjustment and the parties are unable to resolve such dispute then Arthur Young and Company shall be given access to Contractor's records relating to the disputed adjustment and the determination of Arthur Young and Company with respect to the dispute shall be conclusive and binding on the parties. If Arthur Young and Company determines that the adjustment proposed by Contractor is appropriate, then Mobil will pay for the services rendered by Arthur Young and Company, otherwise Contractor shall pay for such services.

5. In the event governmental action or inaction prevents or substantially impedes Mobil's manufacture or sale of the herbicide which it produces from NBE, Mobil may terminate this Agreement on 30 days written notice to the Contractor.

APPENDIX D

TO AGREEMENT

BETWEEN MOBIL CHEMICAL COMPANY

AND

EAGLE RIVER CHEMICAL CORPORATION

MADE AS OF

1 JAN. 1977

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:			YTD	ORIG
95% CBE	-	0.820 lb.	.825	.84
EDC	-	0.095 lb.	.08	.125
H_2SO_4	-	0.~~840~~ 85 lb.	.845	.88
HNO_3	-	0.~~330~~ .34 lb.	.333	.36
NH_3	-	0.050 lb.	.049	.055

Shackelford

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP
SUITE 2414 • 5100 POPLAR • MEMPHIS, TN 38137 • 901-767-6851 • TELEX 53927

November 5, 1976

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Re: Agreement of September 1, 1975

Dear Don:

As discussed in Memphis, October 14th, we are proposing an amendment to subject NBE Agreement to provide a more viable basis for the retention of Eagle River as your supplier of this material. A copy of our proposed "Amendment to Agreement" is enclosed. We believe a number of mutual interests will be served by this proposal, most of which we had the opportunity to discuss during your visit.

Foremost it is our understanding, which we believe you share, that Eagle River has demonstrated a high degree of competence in producing NBE and has at all times performed in a timely and efficient manner. It is a matter of record that the material efficiency factors, since the start-up of the facility, have exceeded original expectations, resulting in a savings which has inured solely to the benefit of Mobil.

We also believe it is important to Mobil that Eagle River has the ability to add incremental capacity, to meet Mobil's growing requirements for NBE, with modest capital expenditures. Attached as Exhibit E to the proposed amendment, is a summary of Eagle River's expansion capability on a three phase program which would raise the plant capacity incrementally from approximately 6,000,000 pounds annually to a total of approximately 12,000,000 pounds annually. The three phases which would raise the annual capacity to 7,9, and 12 million pounds are presently estimated to cost $50,000; $150,000 and $250,000 respectively. Thus for a capital expansion totaling about $450,000 an additional 6,000,000 pounds of NBE capacity would be provided. The cost per pound of product would be significantly reduced in the expanded plant.

The purpose for proposing an amendment to the Agreement at this time is that it will be impossible for Eagle River to continue as a supplier of NBE, on either a short or long term basis, unless provision is made to increase Eagle River's compensation for its manufacturing services recognizing that (1) operating costs have escalated since September, 1975,

(2) experience has proven the original Eagle River cost estimates for the production of NBE by Mobil's process were too low particularly in the consumption of utilities and operating supplies and in its requirements for laboratory and maintenance services, and (3) the fact that throughout the history of the agreement there has been an unreliable supply of CBE, the NBE precursor, and during periods of CBE shortage or unavailability the basic costs of the Eagle River's NBE facility have necessarily continued with little or no NBE output to absorb these costs and, in addition, the frequent down times have created abnormal corrosion problems in our facility.

Attached is a summary of operating costs at monthly NBE outputs of 400,000; 450,000 and 500,000 pounds estimated for the first quarter of 1977, which provides the basis for our request that Eagle River's fee be increased in the amended Agreement, subject to escalation or deescalation as necessary and as provided in the formula described and illustrated in the proposed Amended Appendix B, which is attached to our enclosed proposed amendment.

We know that Mobil expects Eagle River to earn a fair return on its investment in order to assure its continuance as a reliable supplier. Accordingly, we are asking that our fee for manufacturing NBE be raised from $0.16 to $0.171 per pound. We have established this fee on faith alone that Mobil will provide, in the future, sufficient CBE to permit Eagle River to produce and transfer to Mobil an average of 450,000 pounds of NBE per month at which output Eagle River would earn an after tax annual return on its original fixed investment of 15.0%. Since we have no control over the raw material source and as a consequence may not, achieve an average output of 450,000 pounds per month, we are forced to assume the risk of having little or no profit. In view of this we feel our requested fee is reasonable.

As you know, over 80% of our costs continue whether or not we are producting NBE. When the facility is down for lack of raw material, all fixed costs and the bulk of our direct variable costs continue since we cannot maintain reliability by dismissing the assigned labor force while awaiting raw material nor can we assign our fixed costs to other products. The only costs not incurred during shutdowns for material are a portion of the utilities, but even these are not totally eliminated and maintenance costs mushroom.

Since our quotation provides only modest profit while producing at the maximum anticipated rates, we must have protection from Mobil for stand-by costs incurred by Eagle River when and if it is necessary to temporarily suspend operations due to failure to receive raw material from Mobil. Accordingly, we propose that in any calendar month that NBE production drops below 400,000 pounds due to lack of raw materials that Mobil pay to Eagle River a stand-by charge of $75.00 per hour for all hours our reactor is down awaiting raw materials in excess of 50 hours. The stand-by cost would reimburse us for our out-of-pocket costs and fixed charges associated with the NBE production but would during such stand-by periods, deprive us of the profits we would normally expect to earn on our fixed investment. Since it is understood that Mobil desires to operate at or near the Eagle River plant capacity and that only the shortage of raw material, generally CBE, causes suspension of NBE operations, it is, in our opinion, and essential to us that we be reimbursed for this portion of our stand-by costs. In the event such charges are necessary we feel that the fee is rightfully a part of the CBE costs to Mobil and not an NBE manufacturing cost to be borne by either of us.

With regard to our proposal for escalation or deescalation, we assume that Mobil would consider this essential, as we do, in a three year manufacturing agreement. In our judgement, the proposed formula properly reflects the effect that changing labor rates, utilities and other costs would have upon the cost of producing NBE, over the long term. We have injected two variations in the formula both of which inure to the sole benefit of Mobil. First, we are excluding our profit factor from the escalation formula and as a consequence only labor, utilities and associated operating costs are escalated or deescalated in theproportion they bear to the overall cost. Secondly, and of great significance to Mobil is the fact that we believe Eagle River's cost to date for maintenance are abnormally high and this cost can be reduced considerably in the future if the projected rates of 400,000 to 500,000 pounds of product per month are maintained. Down time creates very serious problems in nitration plants and the up and down operation we have experienced during the past year has had its toll. In addition, we are making every effort to make permanent corrections rather than to just replace components that have had high maintenance cost due to the corrosive conditions. Accordingly, we are offering to pass on all cost improvements in the maintenance area that result from the continuous operation and component replacement. This is provided for in a formula by passing the benefits, that result, on to you semi-annually. You will note, that based on recent experience, we have had to estimate maintenance for the immediate future at $0.032 per pound of product. If we cut this cost in half during the first five months of 1977, which we believe is possible with a high thru-put, we will pass the savings of 1.6 cents per pound on to you directly in the last half of 1977.

As you know our earnings in the first year of the contract 9/1/76 thru 8/31/76, were disappointing. The chronically short supply of CBE resulted in average outputs below that which we believe would be the case, when we agreed to the compensation rate. Since our costs were relatively constant there were too few months when profit offset the high losses experienced in the poor months such as March and the summer months. The low production in turn led to serious plant deterioration and high maintenance costs. Our loss through the first year was $20,477. In addition, the original investment was underestimated and the fixed cost reached $597,000. The loss and the higher investment cost has affected Eagle River's overall profitability adversely. As a consequence of our original spending, however, we have provided the frame work for a much larger plant which will greatly reduce the incremental cost of NBE to Mobil in the future. For example, we estimate that by adding 6,000,000 pounds of incremental capacity to Eagle River's present NBE plant, the overall cost of producing NBE can be reduced about one fourth.

Considering the savings potential to accrue to Mobil by retaining Eagle River as its primary NBE producer and in recognition that Eagle River has lost substantial funds during the past year because of the low rate of production which raised the unit production cost above its fee and in addition, caused excessive corrosion to its facility, we are proposing that Mobil pay to us a fee for extending the contract and obtaining an option from us to expand incrementally, as requested by Mobil, within the capability described above. Accordingly, we request that upon the signing of the attached proposed Amendment that Mobil pay to Eagle River a renewal and option fee of $75,000.

We would like to complete the Amendment so that it will become effective January 1, 1977, for a three year term. Should you have any questions concerning our proposal, please call me.

Best Regards.

Sincerely,

VERTAC CONSOLIDATED

John O'Neill

J. J. O'Neill
Vice President
Planning & Development

JJO/gn

ENCLOSURES

EAGLE RIVER CHEMICAL CORPORATION

SUMMARY OF OPERATING COSTS (IN $)
NBE MANUFACTURE FOR
FIRST QUARTER, 1977

	400,000 pounds		450,000 pounds		500,000 pounds	
Direct Variable Cost						
Salary & Fringes	1,792	.004	1,792	.004	1,782	.004
Wages & Fringes	9,996	.025	9,996	.022	9,996	.020
SUB TOTAL	11,788	.029	11,788	.026	11,788	.024
Utilities						
Electricity	4,920	.013	5,535	.013	6,150	.012
Water	550	.001	600	.001	750	.002
Steam	1,600	.004	1,800	.004	2,000	.004
SUB TOTAL	7,070	.018	7,935	.018	8,800	.018
Other						
Nitrogen	2,880	.007	3,240	.007	3,600	.007
Other	1,859	.005	1,850	.004	1,859	.004
SUB TOTAL	4,739	.012	5,099	.011	5,459	.011
SUB TOTAL	23,597	.058	24,822	.055	26,147	.053
Direct Fixed Cost						
Laboratory	3,973	.010	3,973	.009	3,973	.008
Stores/Rec.	906	.002	906	.002	906	.002
Safety/Sec.	2,977	.007	2,977	.007	2,977	.006
Maintenance	14,252	.036	14,252	.032	14,252	.029
Corporate G/A	3,000	.008	3,000	.008	3,000	.005
Period Costs						
Administrative	5,706	.014	5,706	.013	5,706	.011
Ins., Txs., Depr.	6,388	.016	6,388	.014	6,388	.013
SUB TOTAL	37,202	.093	37,202	.053	37,202	.074
SUB TOTAL	60,799	.152	62,024	.138	63,349	.127
PreTax Profit	7,600	.019	14,926	.033	22,151	.044
Conversion Fee Per Pound		0.171		0.171		0.171

AMENDMENT TO AGREEMENT

AGREEMENT, made as of January 1, 1977, by and between Mobil Chemical Company, a Division of Mobil Oil Corporation, a New York corporation, hereinafter called "Mobil", Vertac, Inc., a Texas corporation, hereinafter called "Vertac" and Eagle River Chemical Corporation, an Arkansas corporation, hereinafter called "Eagle River".

WITNESSETH:

WHEREAS, Vertac and Mobil entered into an Agreement dated as of September 1, 1975, (hereinafter the "Agreement") for the manufacture by Vertac for Mobil of NBE, as identified therein; and

WHEREAS, Vertac's obligations under said contract have been performed by Eagle River, its wholly owned subsidiary; and

WHEREAS, the parties desire to amend the period and terms of the Agreement and to substitute Eagle River as a party to the Agreement in lieu of Vertac; and

WHEREAS, Eagle River represents and warrants that its NBE facility at West Helena, Arkansas is capable of incremental expansion to a total capacity of approximately 12,000,000 pounds annually; and

WHEREAS, Mobil desires that Eagle River maintain the capability of said expansion and that Eagle River supplement its facility as required by Mobil to provide additional NBE capacity up to a total of approximately 12,000,000 pounds annually.

NOW, THEREFORE, the Agreement is amended as follows:

1. Eagle River is substituted for Vertac as the "Contractor" identified in the Agreement.

2. (a) In consideration of the payment by Mobil to Eagle River of the sum of Seventy Five Thousand Dollars ($75,000), the receipt of which Eagle River hereby acknowledges, Eagle River hereby grants to Mobil the exclusive right and option during the term of this agreement to require Eagle River to expand Eagle River's NBE capacity in accordance with the terms and conditions as provided in this Section 2, up to an annual production capacity of NBE of approximately 12,000,000 pounds. Said option may be exercised by written notice from Mobil to Eagle River made no later than July 1, 1977, to expand its capacity to 7,000,000 pounds of NBE per annum. Mobil may exercise its option as provided in this Section 2. to require Eagle River to increase its capacity to approximately 9,000,000 pounds of NBE or to approximately 12,000,000 pounds of NBE per annum providing said option is exercised by written notice to Eagle River no later than December 31, 1977.

(b) Within 30 days of receipt of Mobil's written request for expansion of Eagle River's NBE facilities as provided in Section 2. (a) above, Eagle River shall provide Mobil with a proposed construction schedule and an estimate of the cost of making the expansion requested by Mobil. The parties shall negotiate in good faith to establish compensation for NBE to be produced in the expanded facility according to the procedure outlined in Amended Appendix B, attached hereto. Eagle River shall be under no obligation to undertake the construction of the additional facilities until Mobil and Eagle River have reached an agreement on compensation to be paid by Mobil for each pound of NBE produced by Eagle River in the expanded facility as provided in the Amended Appendix B.

(c) In the event Mobil exercises its rights to require Eagle River to expand its NBE capacity pursuant to this Section 2., the terms of this Amendment to Agreement shall be further amended to change the termination date from December 31, 1979, to a date no earlier than 30 months subsequent to the date Eagle River commences production of NBE at the rate of production utilizing the planned expanded capacity as provided under the terms and conditions of this Section 2., and Amended Appendix B, Section 3 and 4.

3. Section 12 of the Agreement is amended by changing the date "March 31, 1978" to "December 31, 1979".

4. Section 13 of the Agreement is amended by changing "Appendix B" to "Amended Appendix B", effective as of the date of this Amendment to the Agreement.

5. Section 20 of the Agreement is deleted.

6. Section 21 of the Agreement is amended by deleting the last sentence and inserting the following in lieu thereof:

"The provisions of Sections 6, 7, 10 and 15 of this contract shall survice any termination of this contract."

7. Section 25 is deleted and the following is inserted in lieu thereof:

25. The term of this contract shall commence from the date of this Amendment to Agreement first above written and shall terminate on December 31, 1979, unless earlier terminated pursuant to Section 21 hereof."

8. All other terms and conditions of the Agreement shall remain in full force and effect during the period thereof, as amended herein.

IN WITNESS WHEREOF, Mobil, Vertac and Eagle River have hereunder executed this contract.

MOBIL CHEMICAL COMPANY

By: ______________________

Title: ______________________

Date: ______________________

VERTAC, INC.

By: ______________________

Title: ______________________

Date: ______________________

EAGLE RIVER CHEMICAL CORPORATION

By: ______________________

Title: ______________________

Date: ______________________

AMENDED

APPENDIX B

To Agreement Between

Mobil Chemical Company

AND

Vertac, Incorporated

Effective January 1, 1977

1. Contractors compensation for NBE shall be as follows:

   A. For all NBE delivered hereunder: $0.171 per pound.

   B. Contractor shall invoice Mobil for each shipment of NBE made on an individual shipment basis. Prices are FOB, West Helena, Arkansas.

   C. The price per pound as provided for in Section 1. A above shall be subject to escalation or deescalation commencing in the second calendar quarter of 1977 and in each subsequent calendar quarter for the life of this Agreement, providing Eagle River advises Mobil fifteen (15) days before the first of the subsequent quarter that a price adjustment is required as a result of the following computation:

$$\text{Fee } \$ = 0.033 + F^2 \Big[0.45 \frac{LDR^2}{5.43} + 0.42 \frac{CPI^2}{172.6} + 0.13 \Big(0.75 \frac{KWH^2}{.0267} + 0.25 \frac{MC}{0.8}$$

   Where,

   1. F^2, is the basic cost, namely $0.138 per pound ($0.171 less $0.033 profit) adjusted for reduction in maintenance costs on a semi-annual basis commencing on July 1, 1977, and on each subsequent January 1st and July 1st for the life of the agreement computed as follows:

$$F^2 = 0.138 - 0.032 + \left(\frac{M^2}{450,000} \right)$$

Where,

M^2 is average monthly maintenance cost, as recorded in Eagle River's standard cost sheet, for maintaining Eagle River's NBE facility in a safe, efficient and reliable condition for the five (5) calendar months prior to computing escalation or deescalation as provided for in this Section 1.C.

2. 5.43 is the average lead operators rate in \$/hour for the first quarter of 1977 and LDR^2 is the average rate to be paid in the subsequent quarter.

3. 172.6 is the Consumer Price Index for September, 1976. CPI^2 will be the last published CPI figure available before computing the adjusted fee.

4. 0.0267 is the cost of electricity in dollars per KWH anticipated for the 1st quarter of 1976. KWH^2 is the average cost of electricity per KWH for the three last billing periods prior to computing the adjusted fee.

5. 0.802 is the cost of gas in dollars per thousand standard cubic feet anticipated for the first quarter of 1977. MCF^2 is the cost of gas per thousand standard cubic feet for the last billing prior to computing the adjusted fee.

2. In any calendar month in which the production of NBE is less than 400,000 pounds Mobil shall pay to Eagle River a stand-by fee of Seventy-Five Dollars (\$75.00) per hour for each hour for which production is interrupted for lack of raw materials, regardless of whether excused pursuant to Section 18, in excess of fifty (50) hours in said month. Interruption shall be established from the

plant log where the entry is made and witnessed by the Shift Supervisor that the reactor is ready for loading and awaiting the arrival of raw materials needed for the first manufacturing step. Time of arrival of and availability for loading shall be noted and witnessed by the Shift Supervisor.

3. Within 30 days of receipt of written notice from Mobil of its desire to exercise its rights and option as provided in Section 2, of this Appendix, Eagle River shall provide Mobil with the following information:

    a. Eagle River's current estimate of the cost of adding the additional capacity for the Phase of expansion elected by Mobil from those shown in Appendix E, attached hereto.

    b. The time schedule estimated by Eagle River for completion of the expansion phases.

    c. The estimated decrease in cost per pound of NBE to be produced in the expanded facility based upon Mobil's best estimate of the NBE which it shall require Eagle River to produce monthly.

    d. The profit in dollars per pound of NBE required by Eagle River to provide an annual pretax return on Eagle River's fixed investment in NBE facilities which profit shall be thirty percent (30%) per annum on the sum of Five Hundred Ninety-Seven Thousand Dollars ($597,000) and Eagle River's estimate, made at the time Mobil exercises its option, of the cost of the additional facilities required by Mobil.

4. Prior to Eagle River's commencing the new construction, but in no event later than March 1, 1978. Mobil and Eagle River shall agree to compensation in dollars per pound for the total NBE output of the expanded facility and shall during the same period affirm the escalation or deescalation formula provided for in Section 1. C. of this Appendix B, Revision of January 1, 1977, or negotiate in good faith to provide a replacement formula which shall reflect the ratio of costs among labor, utilities and other costs that are estimated will occur with the expanded output of NBE.

Illustrative calculation of NBE fee adjusted for maintenance costs and escalation or deescalation as provided under Section 1.C. follows:

Conditions:

Example:

Time - June 15, 1977

M^2	Average monthly maintenance Charge January 1, 1977 to May 30, 1977	$9,610
LDR^2	Average lead operator rate to be paid in 3rd quarter, 1977	$ 5.70
CPI^2	Per Department of Commerce release for April, 1977	174.5
KWH^2	Average of three (3) billings immediately preceeding June 15, 1977	$0.029
MCF^2	Billing of May 1977	$0.84

$$F_2 = 0.138 - 0.032 + \frac{9610}{450{,}000}$$

$$= 0.106 + 0.021$$

$$= 0.127$$

$$\text{Fee} = \$0.033 + 0.127\left[0.45\,\frac{5.70}{5.43} + 0.42\,\frac{174.5}{172.6} + 0.13\left(0.75\,\frac{0.029}{0.0267} + 0.25\,\frac{0.84}{0.802}\right)\right]$$

$$\left[0.473 + 0.424 + 0.13\left(0.818 + 0.263\right)\right]$$

$$\left[.897 + 0.141 = 1.038\right]$$

Fee = .033 + 0.127 x 1,038 = 0.033 + 0.132

Fee = $0.165 per pound for 3rd quarter 1977

The following illustrative calculation demonstates the manner in which, the stand-by fee provided in Section 2 of this Appendix B, Revision of January 1, 1977, shall be computed.

Month - April 1977

NBE produced 368,000 pounds

Hours down time due to lack of raw materials - 72

72-50 = Hours stand-by chargeable to Mobil

22 x $75 = $1,650

Illustrative calculation of Conversion fee to be paid by Mobil to Eagle River to produce 11,000,000 pounds of NBE, per annum subsequent to plant expansion as provided in Section 2 of this Amendment.

Cost base for fee determination subsequent to expansion:

Cost	450,000 lbs/month	916,666 lbs/month
Direct Variable	0.055	0.044
Direct Fixed	0.050	0.032
Period Costs	0.033	0.022
Profit	0.033	0.029*
Conversion Fee	$ 0.171/pound	$ 0.127/pound

* 30% per annum return on investment of $1,047,000. (Original $597,000 plus additional $450,000)

MOBIL NITRATION (NBE) EXPANSION

VEL OF ANSION	MONTHLY CAPACITY MLBS	ANNUAL CAPACITY MMLBS	CAPITAL * REQ'D $M	ADDITIONAL** EXPENSES	REMARKS
RENT	450	+5	none	none	Unit requires shakedown at higher production levels (sustained). Batch cycle times well documented.
:URRENT :AINABLE	600	+7	50	add operator on days for tank trucks	Replace selected CS piping and pumps with SS items. Requires slight increase in batch si and high stream factor. pH control of NH_3 & EDC storage recommended but not essential.
	800	+9	150-200	add operator on swing shift for tank trucks	Requires additional 3.5M gal SS reactor to allow separate phase separation & neutralization thus freeing nitration reactor. Add additional CBE storage. Add second cooling tower.
I	1000	12	250-450	add third operator spot add day production supervisor for Mobil unit	Requires conversion of 3.5 M gal SS reactor (per above) to nitration service including two acid meas. bottles & their pumps, weigh cell & reactor interlocks, heat exchanger for reactor cooling etc.. Add NBE storage tank, enlarge spent acid & am. sulfate storage all to 20M gal. Add building structure & roof annex for reactor. Add second refrigeration unit. Convert NBE sta (current) to crude NBE/EDC surge. Feed stripper semi-continous "ala" Mobil NBE process from this converted tank.

* Low capital range value represents minimum capital for that phase only. High capital range value represents total capital thru each phase (i.e. total capital thru Phase III is $450M).

** Represents 9 operators Phase I, 10 operators Phase II, & 12 operators Phase III.

	INSTALLED COST	REMARKS
1. pH control for NH_3 addition	$ 5M	Uniloc type pH probe & transmitter/controller & control valve/SS tubing with valves, flush point strainer, etc.
2. EDC storage 20M gal CS with pump	20M	Tank +$6M plus pump $1M, concrete foundation, pi level instrumentation cons. vent & flame arresto
3. Piping & Equipment revisions	25M	Replace CS process pumps with SS. Replace CS pi in EDC system, stripper vent, system etc.
TOTAL	50M Phase I	
4. Add reactor 3.5 M SS with transfer pump	75M	Base reactor $20-30M per J. E. Fowler, Times 3 fo foundation, aqua NH_3 & process piping, electrica etc. Include weigh cell & base structural.
5. CBE storage 20M gal CS with pumps	25M	Ditto above item 2 plus cost of panelcoil (STM heated) & insulation.
6. Cooling tower	50M	Installed cost plus pumps by new or good shape used Marley Model 453-201 or similar ($24M~1/30/
TOTAL	150M Phase 2	
7. Acid feed tanks & pumps	20M	Two small 1Mgal CS (H_2SO_4) & aluminum (HNO_3) acid feed tanks with small (EOO) metering pumps ($5M times 4)
8. Enlarge Spent Acid & Am. sulfate storage	15M	Add CS rings to go from 10 Mgal to 20M gal in the field (Materials $7M & labor $8M)
9. Reactor Heat Exchanger & large circulating pumps	40M	Heat Exchanger (10M), pump $6M Bare Cost
10. NBE Storage 20Mgal CS with pump	25M	Ditto 5
11. Building Structure & roof	35M	Structural steel for additional large bay & roof (transite) to house new reactor, acid feed system reactor heat exchanger & refrigeration.
12. Refrigeration	100M	150M ton new or good used (J.E. Fowler $30M simila unit prod.21--$65 new unit 1/30/75 quote).
13. Modify stripper for semi-continous operation & other minor changes	15M	Revise piping, add level instrument or weigh cell to stripper.
TOTAL	250M Phase 3	
TOTAL EXPANSION	$450M	

VERTAC, INC. SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137 • 901-767-6851

INTER-OFFICE CORRESPONDENCE

DATE: October 1, 1979

TO: Pat Bomar

FROM: George Mather

SUBJECT: MOBIL NBE - FOLLOWUP

REPLY REQUESTED BY (DATE)

Per our September 20th Mobil visit, Vertac was asked to prepare a proposal for NBE costs savings, a schedule for future capacity increases, and to review contract specifications. The enclosed attachments are summarized as follows:

Attachment I summarizes areas for potential cost savings in the raw material and waste disposal areas. A range of savings of 1.5 to 4.5¢/lb. of NBE is given to reflect the various project alternates. It is recommended that a joint Mobil/Vertac technical team approach this list on a "best effort" basis. Such technical attention would probably result in a smoother resumption of normal NBE operations.

Attachment II shows Vertac's ability to increase production at various stages of capital addition. The data is largely based on an earlier proposal, but it has been updated for more recent experience and inflation.

Lastly, contract comments with West Helena plant input are attached.

George Mather

:ts

Attachments

CC: R. A. Guidi
R. D. Karkkainen
J. W. Shackelford
Mobil NBE File

It is the
It is the -

ATTACHMENT I

NBE COST SAVINGS PROPOSALS

Item/Description	Cost Savings Ranges (¢/lb.)	Remarks
1. NBE Yield Study	.5 to 2.0	Joint best effort is suggested to optimize NBE raw material and CBE yields. Because the Mobil NBE process does work well, there is a natural justified tendency to leave well enough alone. However, the potential for real savings in each chemical does exist. Possible ideas include improved pH control (NH_3), improved stripper vacuum (EDC), more reactant tailoring and programming of the NBE reaction (HNO_3, H_2SO_4, & CBE).
2. Bulk EDC	.25 to .3	Cost savings of bulk EDC shipments versus drums. Historical yield EDC/NBE estimated at .8 lb./lb.
3. Ammonium Sulfate waste cost reduction	.75 to 2.2	Joint best effort suggested. Lower savings figure reflects improved pH control and estimated. Vertac versus Mobil offsite costs. Higher savings reflect modification of wasting neutralization scheme and on site Vertac waste treatment. Other options exist. Vertac is currently pursuing use of another am sulfate stream as a by-product fertilizer.
TOTAL	1.5 to 4.5¢/lb. NBE	

ATTACHMENT II

MOBIL NITRATION (NBE EXPANSION)*

LEVEL OF EXPANSION	NOMINAL MONTHLY CAPACITY M LBS.	ANNUAL CAPACITY MM LBS.	CAPITAL	ADDITIONAL EXPENSES	REMARKS
Current	640	8	none**	none	Unit requires shakedown of resumed operation. Assumes raw materials on hand.
I Current Attainable	800	10	50M	none anticipated	Stream factor improvement needed. Spare acids metering pumps, spare vacuum pump for stripper.
II	1000	12.5	250M	Add operator on day shift for tank trucks	Additional 3.5M gal SS reactor to allow separate phase separation and neutralization thus freeing nitration reactor. Provide reactor foundation and electrical Enlarge NBE storage tank.
III	1200	15	400M	Add third operator spot. Add full time day production supervisor for Mobil unit.	Requires conversion of 3.5 M gal. SS reactor (per above) to nitration service including two acid meas. bottles and thei pumps, weigh cell and reactor safety inter locks, heat exchanger for reactor cooling Add bulding structural and roof annex for reactor. Add or enlarge NBE, spent acid, and am. sulfate storage tanks. Provide additional rail siding. Convert NBE storage to crude NBE/EDC surge tank. Operate stripper semi-continuous from this converted tank.

*Assumed ample use of Mobil provided railcars for raw material and product storage as has been the past practice.

*Since the proposal of a similar expansion in 1976, Vertac has increased throughput from 500M lbs. to +700M lbs./month. As a portion of Vertac's long term capital addition program, substantial improvements in electrical, cooling water, and refrigeration utilities have already been added for the NBE unit at a cost near $250M.

APPENDIX A

To Agreement
between Mobil Chemical Company
and
Vertac Chemical Corporation

made as of

January 1, 1980

9FM 10/1/7
wHelena
inputs

SPECIFICATIONS - RAW MATERIALS

Methyl meta chlorobenzoate (CBE)

Assay	93-95% min.	93% MIN.
Methanol	0.1% max.	Okay But NOT previous analyzed
Dichlorobenzoate	0.5% max.	
Color APHA	200 max.	

Anhydrous Ammonia (NH_3)

Assay	99.8% min.	Okay But NOT analyzed

Nitric Acid (HNO_3)

Assay	97.5% min.	97.5% Min
Sulfate (as H_2SO_4)	0.07% max.	Okay But NOT previous analyzed
Chloride (as HCl)	5 PPM max.	
Nitrobodies	None	
Iron (as Fe)	15 PPM max.	

Sulfuric Acid (H_2SO_4)

Assay	Virgin 98% min.	98.0%

Ethylene Dichloride (EDC)

Assay	Technical grade 99% purity less than 1% water	Okay But NOT analysed

APPENDIX C

To Agreement
between Mobil Chemical Company
and
Vertac Chemical Corporation

made as of

January 1, 1980

SPECIFICATION - NBE

(2-Nitro,-5-chloro-methylbenzoate)-

Assay	83-85% min.	81% MIN.
EDC	0.5% max.	0.5% Max.
CBE	3.0% max.	1.0% Max.

Balance other NBE isomers

APPENDIX D

To Agreement
between Mobil Chemical Company
and
Vertac Chemical Corporation

made as of

January 1, 1980

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:

95% CBE	0.825 lb.
EDC	0.095 lb.
H_2SO_4	0.845 lb.
HNO_3	0.340 lb.
NH_3	0.050 lb.

okay expect lower figures from MOBIL as we do substantial Better than these

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP
SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137

INTER-OFFICE CORRESPONDENCE

DATE: January 3, 1977

TO: Bill Shackelford

FROM: John O'Neill

SUBJECT: NBE AMENDMENT

REPLY REQUESTED BY (DATE)

Attached is a draft response to Mobil's proposal of 12/17/76. It will be necessary to reach agreement on the following items before submitting it to Mobil:

(1) Eagle River's position on Mobil's $0.166 per pound offer.

(2) A formula for compensating Eagle River when it is shut down for lack of CBE. The proposed formula does not appear to be acceptable and a counter offer will be necessary.

(3) The establishment of escalator, per proposed Appendix B, Section 4.

I will come to Eagle River Thursday January 6, to reach agreement on the above items.

John O'Neill

John O'Neill

JJO/sl
attachment

Bill,
we will
also have to
agree on numbers
for Exhibit D.
Jon

January 3, 1977

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Dear ~~Don:~~ Mr. Faggert:

Reference is made to the agreement between our two companies dated September 1, 1975 relative to the manufacture of NBE. It is hereby mutually agreed to amend the aforesaid Agreement in the following manner effective January 1, 1977.

Section 8 is deleted and replaced with the following:

"8. The parties agree that the yields to be achieved by the Contractor will be the yields set forth in Appendix D attached hereto. If the average yield with respect to any of the Materials during any calendar quarter is below those set forth in Appendix D, Contractor will give Mobil the opportunity to review Contractor's operations and will cooperate fully with Mobil in attempting to increase yields. If, within such period of time as Mobil deems reasonable, the yields have not reached the levels set forth in Appendix D, Mobil, without any liability, may terminate this contract on written notice to Contractor."

Section 12 is deleted and replaced with the following:

"12. To the extent that Mobil makes available Materials in accordance with the terms of this Agreement, the Contractor, beginning on January 1, 1977, shall manufacture and deliver to Mobil such quantities of NBE as are ordered by Mobil, provided that the Contractor shall not be obligated to supply more than 6,000,000 pounds during any calendar year without its prior written consent."

Section 20 is deleted and each subsequent section is renumbered accordingly.

Delete from Section 21 "and paragraph 3 (a) of Appendix B."

The original section 25 (now section 24) is deleted and replaced with the following:

" 24. The term of this Agreement shall commence on the date first written above and shall terminate on December 31, 1979 unless extended pursuant to the next sentence or terminated pursuant to section 20 or Appendix B. Mobil, on written notice delivered to Contractor not later than September 30, 1979 may extend the term of this Agreement through December 31, 1980 and Mobil, in the event this Agreement is extended thru 1980, on written notice delivered to Contractor not later than September 30, 1980 may extend the term of this Agreement through December 31, 1981."

The following is added to the Agreement as section 26:

"26. Contractor will not sell or convey any interest in its facilities for the manufacture of NBE except in a bona fide, arm's length, cash sale of all said facilities and after first having given Mobil the opportunity to purchase said facilities for the price and on the terms and conditions available from the prospective purchaser. Contractor will notify Mobil in writing of the identity of the prospective purchaser and the price and terms and conditions offered by it. Mobil will have 30 days after receipt of said notice to exercise its right of first refusal by purchasing the facilities for such price and on such terms and conditions. Notwithstanding the provision of this section, Vertac shall not be obligated to give Mobil the opportunity to purchase said facilities if the sale of said facilities are a part of transaction in which Vertac sells all or substantially all the assets ~~or all~~ OR of substantially all of the stock of the Eagle River Chemical Corporation to a second party."

Appendix B attached to the Agreement is deleted and replaced with the Appendix B attached hereto. Appendix D attached hereto shall become Appendix D to the Agreement.

All other terms and conditions of the Agreement shall remain in full force and effect as written.

Please signify your acceptance of the above by signing in the space provided below and returning one copy to Vertac, Inc., Memphis, Tennessee 38137, attention of John J. O'Neill.

Very truly yours,

VERTAC, INC.

By: ______________________________

Title: ______________________________

Date: ______________________________

Accepted:

MOBIL CHEMICAL COMPANY

By: ______________________________

Title: ______________________________

Date: ______________________________

APPENDIX B

1. Mobil shall pay Contractor $0.166 per pound of NBE delivered hereunder which meets the specifications set forth in Appendix A.

2. With respect to each calendar month in which Vertac produces less than 400,000 pounds of NBE for Mobil's Account, Mobil, within 45 days after the end of that month, will pay Contractor an amount which results from the following calculation:

   (A - (B + C + D + E)) x F = amount payable*

   Where:

   A = 400,000

   B = number of pounds of NBE manufactured for Mobil's account in that month.

   C = number of pounds of NBE which contractor failed to produce in that month due to consumption of CBE in excess of that set forth in Appendix D.

   D = the number of pounds which contractor reasonably should have produced from the CBE supplied at the yields set forth in Appendix D but did not produce for reasons not excused by section 18.

   E = the number of pounds not produced for Mobil's account in said month, on Mobil's instruction due to circumstances described in section 18 providing, however, that failure on the part of Mobil to deliver sufficient raw material to permit Vertac to produce 400,000 pounds of NBE

in any calendar month, based on yields set forth in Appendix D, shall not be excused for any reason including those set forth in said section 18.

F = $0.123

* in no event shall the amount payable be a negative number as a result of the sum of C, D and E, exceeding B.

3. Amounts paid by Mobil pursuant to paragraph 2 above in any cal yr will be credited by Contractor against invoices in that year ~~future invoices~~ at a rate of $0.123 per pound for all pounds of NBE in excess of 6,000,000 ~~1,500,000~~ pounds ~~taken~~ produced in ~~any three consecutive calendar months~~ said year. Said credit will be applied against the first invoice(s) to be rendered ~~after~~ at the end ~~of such three month period.~~ the calendar year.

4. The fee payable pursuant to paragraph 1 above with respect to deliveries in each calendar quarter will be increased or decreased, as the case may be, by the cumulative effect of the following:

   a. For each increase or decrease of $0.10 per hour, off a base of 5.12 per hour, in the ~~operating~~ lead operator ~~weighted~~ ~~average~~ wage rate of ~~hourly employees~~ in Mobil unit at Contractor's West Helena, Arkansas facilities during the immediately preceding quarter, the fee will be increased or decreased by ~~$0.0007~~ $.0012 per pound, fractions in proportion.

   35%

   b. For each increase or decrease of $0.01 per KWH, off a base of .028/KWH, in the elect- power rate payable at Contractor's said facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0046 per pound, fractions in proportion.

.0364
.013

.013
.138
= .0942
X 1.35
= ~~.01069~~
.12717

c. For each increase or decrease of $0.10/M lbs., off a base of 2.00/M lbs., in the weighted average cost of steam at such facilities during the immediately preceding calendar quarter, the fee will be increased or decreased by $0.0003 per pound, fractions in proportion.

Contractor shall maintain, for a period of one year after the period to which they relate, all records relating to the fee adjustments referred to in this paragraph. Mobil, on 15 days advance written notice, may inspect Contractor's records for the purpose of determining the appropriateness of any fee adjustment proposed by Contractor. If Mobil disputes such adjustment and the parties are unable to resolve such dispute then Arthur Young and Company shall be given access to Contractor's records relating to the disputed adjustment and the determination of Arthur Young and Company with respect to the dispute shall be conclusive and binding on the parties. If Arthur Young and Company determines that the adjustment proposed by Contractor is appropriate, then Mobil will pay for the services rendered by Arthur Young and Company, otherwise Contractor shall pay for such services.

5. In the event governmental action or inaction prevents or substantially impedes Mobil's manufacture or sale of the herbicide which it produces from NBE, Mobil may terminate this Agreement on 30 days written notice to the Contractor.

APPENDIX D

TO AGREEMENT

BETWEEN MOBIL CHEMICAL COMPANY

AND

EAGLE RIVER CHEMICAL CORPORATION

MADE AS OF

1 JAN. 1977

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:			1976	avg
95% CBE	-	0.820 lb.	.825	.84
EDC	-	0.095 lb.	.08	.125 ~~.095~~
H_2SO_4	-	0.840 lb.	.844	.88
HNO_3	-	0.330 lb. (30)	.333	.36
NH_3	-	0.050 lb.	.049	.055

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP

SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137

INTER-OFFICE CORRESPONDENCE

Call Mr. Cook -

DATE: January 31, 1977

TO: J. W. Shackelford

FROM: J. J. O'Neill

SUBJECT: MOBIL NBE

REPLY REQUESTED BY (DATE)

① Ignore propanil — ignore [illegible]

Faggert claims the factor we put in for labor escalation of $0.0012 per pound is inconsistent with both our summary of operating costs we supplied him in November and with his knowledge of the number of people assigned. Please provide a manning chart to support your request.

[illegible] break even

Also, he claims the steam consumption of $.002 per pound is inconsistent with our cost sheet of November and that it should be $0.0003. Please provide back up for your numbers.

Should we be making prop? tech?
Availability of DCA, [illegible] tech [illegible]
we buy foreign mill?

JJO/sl

How much propanil has to be sold to justify prodn of prop. tech - ?

→ Call Gayle Kennedy to determine intl price of DCA & Tech I for this determination

→ du Pont - 1 year's projection - call Steve
1977 projected annual P-10 budget at 20¢
93,357 gal $25,662 $.276/gal
Study P-10 budget to determine why we don't make $.08 per gallon -
New budget for P-10 -

10/20/77

to PAT BOWMAR

SUBJECT – MOBIL NBE CONTRACT

PER YOUR REQUEST for a MOBIL NBE unit "PRICE tag", WE offer the following:

① MOBIL REQUESTS A BUYOUT OPTION for NBE unit IF VERTAC or EAGLERIVER IS SOLD to another party & NBE production is JEOPARDIZED. However, MOBIL DOES NOT WANT TO PURCHASE & OPERATE THE NBE unit (this is an "OUT" for them only).

② BASIS of COST to MOBIL IS ALL ASSETS of the MOBIL NBE unit including STRUCTURAL STEEL, PIPING, INSTRUMENTS, ETC.. Not included is the concrete foundation, tank farm SLAB, control room Bldg & ELECTRICAL vault/motor control center. Nor are offsite (RAIL SPOTS, ETC.), UTILITIES, etc. included.

(3) In pricing the MOBIL assets, the following was considered:

(a) Eagle River's charter is to make chemicals NOT sell productive assets.

(B) The accounting value for MOBIL NBE reflects "windfall" or non reccurring benefits on used equipment available at the time it was built.

(C) Replacement cost is a definite factor (McGraw-Hill index shows appx. 15-25% plant cost inflation for the 1975 to current time period).

(D) Discussed all of the above type factors with Jim Fowler for his comments.

(E) Considerable corrosion has taken place in the MOBIL NBE plant BUT Eagle River has consistently replaced equipment items with equal or better materials.

(4) Based on all of the above MOBIL NBE unit price estimate is:

$700,000

cc—J. Shackelford
J. Fowler J. Mile

Geoge Mather

To: Bill Shackelford 8/30/77

Re: Mobil Operation

1. I plan to switch to every other week end operation in Mobil starting in September

2. However, I think we should consider getting a couple of extra men to work in Mobil if we go back to straight seven day operation. These men are easily justified

A. Value of incremental production (assumes adequate CBE)

1. Extremely conservative estimate of incremental production is 100,000 #/mo. Incremental value is 14¢/#

$$\$/mo = (100,000\ \#/mo)(.14\ \$/\#) = \$14000/mo$$

2. Cost of 2 men/year = \$23,000 = \$1917/mo

B. Cost of labor - O.T. vs reg

Coverage by O.T. = \$3644/mo
Coverage by reg = \$1917/mo

3. Hiring of extra people will depend on P-10 prospects for continued production, but we need to be able to justify keeping our present work force size if P-10 goes down.

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP
SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137

INTER-OFFICE CORRESPONDENCE

DATE: February 7, 1977

TO: Bill Shackelford

FROM: Pat Bomar

SUBJECT: MOBIL "MATERIAL A"

REPLY REQUESTED BY (DATE): February 16, 1977

John O'Neill recently forwarded a process outline for the subject material which he received in late January. If you have reviewed this, I would like to determine the following:

(1) Does the process scheme fit your operation sufficiently to warrant further pursuit?

(2) If so, in what basic equipment would you expect to make this material.

(3) Are there any major problem areas or areas where capital expenditures may be required?

(4) Are there any other comments or suggestions which you may have concerning this project?

(5) Based on the current project load at Eagle River, when would you want to have Bleadon visit?

As soon as I hear from you, I will follow-up with Mobil.

C.P.B.

C. P. Bomar

/em

CC: R. A. Guidi
J. J. O'Neill

VERTAC, INC. SUITE 2414 • 5100 POPLAR • MEMPHIS, TN 38137 • 901-767-6851

January 7, 1977

Mr. D. B. Faggert
Mobil Chemical
P.O. Box 26683
Richmond, Va. 23261

Dear Mr. Faggert:

Attached for your consideration is a draft amendment to our agreement of September 1, 1975. For the most part we have adopted the form and content proposed by you in your draft of December 17, 1976.

We have filled in the numbers which we believe are appropriate for the escalation formula of Appendix B, and adjusted Appendix D yields to reflect 1976 experience which I believe is appropriate. I have also redrafted the formula for fees due Vertac should our production be below 400,000 pounds in any month. I did not know how to apply the formula you proposed but I do believe the attached now meets our mutual requirements.

Other changes, are underlined for your convenience and I believe are self explanatory.

We are disappointed to note that you are not interested in paying us for an option to expand the capacity of the facility as I proposed in my letter to you of November 5, 1976. As you know I was requesting an option fee to mitigate the financial penalties we suffered as a result of receiving less than the planned amount of CBE during a significant period of the agreement. As you know it was forecast that a production of NBE in the 400,000 to 500,000 pound range would commence March 1, 1976. It did not reach this output level till September 1976. I would like to ask that the penalty formula proposed for the amendment be applied retroactively for the period March 1, 1976 to September 1, 1976 ~~and that the 50% fee due~~ be paid to us at a rate of 1 cent per pound of NBE delivered to you commencing January 1, 1977 and that THIS 1 cent premium it be paid until the full penalty is recovered.

TO THE EXTENT OF 50% OF THE CALCULATED FEE AND THIS FEE WHICH AMOUNTS TO $48,442

Sincerely,

VERTAC CONSOLIDATED, INC.

John J. O'Neill
Vice President of Planning & Development

JJO/cm

Attachments

draft
1/7/76
discussed with
Malone

January 3, 1977

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Dear ~~Don:~~ Mr. Faggert:

Reference is made to the Agreement between our two companies dated September 1, 1975 relative to the manufacture of NBE ("Agreement"). It is hereby mutually agreed to amend the aforesaid Agreement in the following manner effective January 1, 1977.

Delete last sentence Section 3.

Section 8 is deleted and replaced with the following:

> "8. The parties agree that the yields to be achieved by the Contractor will be the yields set forth in Appendix D attached hereto. If the average yield with respect to any of the Materials during any calendar quarter is below those set forth in Appendix D, Contractor will give Mobil the opportunity to review Contractor's operations and will cooperate fully with Mobil in attempting to increase yields. If, within such period of time as Mobil deems reasonable, the yields have not reached the levels set forth in Appendix D, Mobil, without any liability, may terminate this contract on written notice to Contractor."

Section 12 is deleted and replaced with the following:

"12. "To the extent that Mobil makes available Materials in accordance with the terms of this Agreement, the Contractor, beginning on January 1, 1977, shall manufacture and deliver to Mobil such quantities of NBE as are ordered by Mobil, provided that the Contractor shall not be obligated to supply more than ~~6,000,000~~ 500,000 pounds during any calendar ~~year~~ month without its prior written consent."

Section 20 is deleted and each subsequent section is renumbered accordingly.

Delete from original Section 21 "now Section 20" and paragraph 3 (a) of Appendix B."

The original section 25 (now section 24) is deleted and replaced with the following:

" 24. "The term of ~~this~~ the Agreement as amended herein shall commence ~~on the date first written above~~ effective January 1, 1977 and shall terminate on December 31, 1979 unless extended pursuant to the next sentence or terminated pursuant to section 20 or Appendix B. Mobil, on written notice delivered to Contractor not later than September 30, 1979 may extend the term of this Agreement through December 31, 1980 and Mobil, in the event this Agreement is extended thru 1980, on written notice delivered to Contractor not later than September 30, 1980 may extend the term of this Agreement through December 31, 1981."

The following is added to the Agreement as section 26:

"26. " Contractor will not sell or convey any interest in its facilities for the manufacture of NBE except in a bona fide, arm's length, cash sale of all said facilities and after first having given Mobil the opportunity to purchase said facilities for the price and on the terms and conditions available from the prospective purchaser. Contractor will notify Mobil in writing of the identity of the prospective purchaser and the price and terms and conditions offered by it. Mobil will have 30 days after receipt of said notice to exercise its right of first refusal by purchasing the facilities for such price and on such terms and conditions.

Providing however, ~~Notwithstanding the provision of this section~~, Vertac shall not be obligated to give Mobil the opportunity to purchase said facilities if the sale of said facilities are a part of transaction in which Vertac sells all or substantially all the assets of Eagle River Chemical Corporation or all of substantially all of the stock of ~~the~~ Eagle River Chemical Corporation ~~to~~ [illegible]le. ~~a second party~~."

Appendix B attached to the Agreement is deleted and replaced with the Appendix B attached hereto. Appendix D attached hereto shall become Appendix D to the Agreement.

All other terms and conditions of the Agreement shall remain in full force and effect as written.

Please signify your acceptance of the above by signing in the space provided below and returning one copy to Vertac, Inc., Memphis, Tennessee 38137, attention of John J. O'Neill.

Very truly yours,

VERTAC, INC.

By: ______________________________

Title: ______________________________

Date: ______________________________

Accepted:

MOBIL CHEMICAL COMPANY

By: ______________________________

Title: ______________________________

Date: ______________________________

APPENDIX B

1. Mobil shall pay Contractor ~~$0.166~~ 0.171 per pound of NBE F.O.B. West Helena, Arkansas delivered hereunder which meets the specifications set forth in Appendix A.

2. With respect to each calendar month in which Vertac produces less than 400,000 pounds of NBE for Mobil's Account, Mobil, within 45 days after the end of that month, will pay Contractor any amount which results from the following calculation:

(A - (B + C + D + E)) x F = amount payable*

Where:

A = 400,000

B = number of pounds of NBE manufactured for Mobil's account in that month.

C = number of pounds of NBE which Contractor failed to produce in that month due to consumption of CBE in excess of that set forth in Appendix D.

D = the number of pounds which Contractor reasonably should have produced in said month from the CBE supplied at the yields set forth in Appendix D but did not produce for reasons not excused by section 18 and not covered by C above.

E = the number of pounds not produced for Mobil's account in said month ~~, on Mobil's instruction~~ due to circumstances described in section 18 provided, however, that failure on the part of Mobil to deliver sufficient raw material to permit Vertac to produce 400,000 pounds of NBE

in any calendar month, based on yields set forth in Appendix D, shall not be excused for any reason including those set forth in said section 18.

The factor E shall be determined by prorating 400,000 pounds for the period in said month during which either party is excused for manufacturing or receiving of NBE for any reason set forth in section 18.

F, = 1 F=$0.123

* in no event shall the amount payable be a negative number as a result of the sum of C, D and E, exceeding B.

3. Amounts paid by Mobil pursuant to paragraph 2 above in any calendar year will be credited by Contractor to Mobil at a rate of $0.123 per pound for all pounds of NOE products in excess of 6,000,000 pounds ~~taken~~ in said calendar year. Said credit will be rendered at the end of such calendar year.

4. The fee payable pursuant to paragraph 1 above with respect to deliveries in each calendar quarter will be increased or decreased, as the case may be, by the cumulative effect of the following:

   a. For each increase or decrease of $0.10 per hour, off a base of $5.12 per hour, in the ~~weighted average~~ wage rate of lead operators employed at Contractor's West Helena, Arkansas facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0012 per pound, fractions in proportion.

   b. For each increase or decrease of $0.01 per KWH, off a base of $0.028 KWH, in the power rate payable at Contractor's said facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0046 per pound, fractions in proportion

c. For each increase or decrease of $0.10/M lbs., off a base of $2.00/M lbs., in the weighted average cost of steam at such facilities during the immediately preceding calendar quarter, the fee will be increased or decreased by $0.~~0003~~ $0.002 per pound, fractions in proportion.

Contractor shall maintain, for a period of one year after the period to which they relate, all records relating to the fee adjustments referred to in this paragraph. Mobil, on 15 days advance written notice, may inspect Contractor's records for the purpose of determining the appropriateness of any fee adjustment proposed by Contractor. If Mobil disputes such adjustment and the parties are unable to resolve such dispute then Arthur Young and Company shall be given access to Contractor's records relating to the disputed adjustment and the determination of Arthur Young and Company with respect to the dispute shall be conclusive and binding on the parties. If Arthur Young and Company determines that the adjustment proposed by Contractor is appropriate, then Mobil will pay for the services rendered by Arthur Young and Company, otherwise Contractor shall pay for such services.

5. In the event governmental action or inaction prevents or substantially impedes Mobil's manufacture or sale of the herbicide which it produces from NBE, Mobil may terminate this Agreement on 30 days written notice to the Contractor.

C. Contractor on 30 days written notice to Mobil may terminate this Agreement if Mobil does not take delivery of 4,800,000 pounds in calendar year 1977 or in calendar year 1978.

APPENDIX D

TO AGREEMENT

BETWEEN MOBIL CHEMICAL COMPANY

AND

EAGLE RIVER CHEMICAL CORPORATION

MADE AS OF

1 JAN. 1977

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:

95% CBE	–	0.~~820~~ 0.825 lb.
EDC	–	0.095 lb.
H_2SO_4	–	0.~~840~~ 0.845 lb.
HNO_3	–	0.~~330~~ 0.340 lb.
NH_3	–	0.050 lb.

DATE: January 3, 1977

TO: Bill Shackelford

FROM: John O'Neill

SUBJECT: NBE AMENDMENT

REPLY REQUESTED BY (DATE)

Attached is a draft response to Mobil's proposal of 12/17/76. It will be necessary to reach agreement on the following items before submitting it to Mobil:

(1) Eagle River's position on Mobil's $0.166 per pound offer.

(2) A formula for compensating Eagle River when it is shut down for lack of CBE. The proposed formula does not appear to be acceptable and a counter offer will be necessary.

(3) The establishment of escalator, per proposed Appendix B, Section 4.

I will come to Eagle River Thursday January 6, to reach agreement on the above items.

J. L. O'Neill

John O'Neill

JJO/sl
attachment

NOTE:
Bill, the draft will be mailed tonight.

J. O'Neill

B. S.

Draft 12/15/76

AMENDATORY AGREEMENT

THIS AGREEMENT, made as of January 1, 1977, by and between Mobil Chemical Company, a division of Mobil Oil Corporation, a New York corporation, hereinafter called "Mobil", Vertac, Inc., a Texas corporation, hereinafter called "Vertac" and Eagle River Chemical Corporation, an Arkansas corporation, hereinafter called "Eagle River",

W I T N E S S E T H:

WHEREAS, Vertac and Mobil entered into an agreement dated September 1, 1975, (hereinafter the "Agreement") concerning the manufacture for Mobil of NBE, as defined therein; and

WHEREAS, the manufacturing operations contemplated by the Agreement have been performed by Eagle River, a wholly owned subsidiary of Vertac, and

WHEREAS, the parties desire to amend the Agreement and to effect an assignment of Vertac's interest in the Agreement to Eagle River:

NOW, THEREFORE, in consideration of the premises, the parties agree as follows:

1. Vertac hereby assigns to Eagle River its entire interest in the Agreement, Eagle River accepts such assignment and Mobil consents to it. Vertac unconditionally guarantees Eagle River's full performance of all of the obligations originally assumed by Vertac under the Agreement and all of the obligations assumed by Eagle River hereunder. Vertac agrees to hold Mobil harmless from and to indemnify it against all cost, loss, liability, and expense (including reasonable attorneys' fees) which results from any breach of the Agreement by Eagle River.

2. The Agreement is amended as follows:

   2.1 Section 8 is deleted and replaced with the following:

   > "The parties agree that the yields to be achieved by the Contractor will be the yields set forth in Appendix D attached hereto. If the average yield with respect to any of the Materials during any calendar quarter is below those set forth in Appendix D, Contractor will give Mobil the opportunity to review Contractor's operations and will cooperate fully with Mobil in attempting to increase yields. If, within such period of time as Mobil deems reasonable, the yields have not reached the levels set forth in Appendix D, Mobil, without any liability, may terminate this contract on written notice to Contractor."

2.2 Section 12 is deleted and replaced with the following:

"To the extent that Mobil makes available Materials in accordance with the terms of this Agreement, the Contractor, beginning on January 1, 1977, shall manufacture and deliver to Mobil such quantities of NBE as are ordered by Mobil, provided that the Contractor shall not be obligated to supply more than ~~6,000,000~~ 500,000 pounds during any calendar ~~year~~ month without its prior written consent."

2.3 Section 20 is deleted and each subsequent section is renumbered accordingly.

2.4 The original section 25 (now section 24) is deleted and replaced with the following:

"The term of this Agreement shall commence on the date first written above and shall terminate on December 31, 1979 unless extended pursuant to the next sentence or terminated pursuant to section 20 or Appendix B. Mobil, on written notice delivered to Contractor not later than 90 days before the end of 1979 may extend the term of this Agreement through December 31, 1980 and Mobil, on written notice delivered to Contractor not later than 90 days, before the end of 1980 may extend the term of this Agreement through December 31, 1981."

2.5 The following is added to the Agreement as section 26:

"a) Contractor will not sell or convey any interest in its facilities for the manufacture of NBE except in a bona fide, arm's length, cash sale of all of said facilities and after first having given Mobil the opportunity to purchase said facilities for the price and on the terms and conditions available from the prospective purchaser. Contractor will notify Mobil in writing of the identity of the prospective purchaser and the price and terms and conditions offered by it. Mobil will have 90 30 days after receipt of said notice to exercise its right of first refusal by purchasing the facilities for such price and on such terms and conditions.

b) In the event Mobil terminates this Agreement pursuant to section ~~21~~ 26 bankruptcy Mobil shall have the right to purchase Contractor's facilities for the manufacture of NBE at their depreciated value on Contractor's books. Upon any such termination, Contractor will provide Mobil with a certificate signed by the chief executive officer of Contractor setting forth said depreciated value and an explanation of how such value was computed. Mobil may exercise the option provided for in this section 26 b) by tendering to Contractor a check for said depreciated value against delivery of such instruments of conveyance as Mobil reasonably may require."

2.6 Appendix B attached to the Agreement is deleted and replaced with the Appendix B attached hereto. Appendix D attached hereto shall become Appendix D to the Agreement.

3. All other terms and conditions of the Agreement shall remain in full force and effect as written.

IN WITNESS WHEREOF, the parties have executed this Amendatory Agreement as of January 1, 1977.

MOBIL CHEMICAL COMPANY

By: ______________________

Title: ______________________

Date: ______________________

VERTAC, INC.

By: ______________________

Title: ______________________

Date: ______________________

EAGLE RIVER CHEMICAL CORPORATION

By: ______________________

Title: ______________________

Date: ______________________

APPENDIX B

1. Mobil shall pay Contractor $0.166 per pound of NBE delivered hereunder which meets the specifications set forth in Appendix A.

2. With respect to each calendar month in which Mobil takes less than 400,000 pounds of NBE, Mobil, within 45 days after the end of that month, will pay Contractor any amount which results from the following calculation:

$$[A - (B + C + D)] \times E = \text{amount payable}$$

Where:

A = 400,000,

B = number of pounds of NBE taken by Mobil in that month,

C = number of pounds of NBE which Contractor would have produced at the yields set forth in Appendix D but failed to produce in that month,

D = the sum of the following: (1) number of pounds which Contractor is obligated to deliver hereunder in that month (based on the yields set forth in Appendix D) by which Contractor fails to deliver, and (2) number of pounds which are not delivered or received or which Mobil cannot use in said month on account of the circumstances described in section 18,

E = $0.123.

3. Amounts paid by Mobil pursuant to paragraph 2 above will be credited by Contractor against future invoices at a rate of $0.123 per pound for all pounds of NBE in excess of 1,500,000 pounds taken in any three consecutive calendar months. Said credit will be applied against the first invoice(s) to be rendered after the end of such three-month period.

4. The fee payable pursuant to paragraph 1 above with respect to deliveries in each calendar quarter will be increased or decreased, as the case may be, by the cumulative effect of the following:

   a. For each increase or decrease of $0.10 per hour, off a base of _____ per hour, in the weighted average wage rate of hourly operating employees at Contractor's West Helena, Arkansas facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0007 per pound, fractions in proportion.

   b. For each increase or decrease of $0.01 per KWH, off a base of _____/KWH, in the _____ power rate payable at Contractor's said facilities during the immediately preceding quarter, the fee will be increased or decreased by $0.0046 per pound, fractions in proportion.

c. For each increase or decrease of \$0.10/M lbs., off a base of _____/M lbs., in the weighted average cost of steam at such facilities during the immediately preceding calendar quarter, the fee will be increased or decreased by \$0.0003 per pound, fractions in proportion.

Contractor shall maintain, for a period of one year after the period to which they relate, all records relating to the fee adjustments referred to in this paragraph. Mobil, on 15 days advance written notice, may inspect Contractor's records for the purpose of determining the appropriateness of any fee adjustment proposed by Contractor. If Mobil disputes such adjustment and the parties are unable to resolve such dispute then Arthur Young and Company shall be given access to Contractor's records relating to the disputed adjustment and the determination of Arthur Young and Company with respect to the dispute shall be conclusive and binding on the parties. If Arthur Young and Company determines that the adjustment proposed by Contractor is appropriate, then Mobil will pay for the services rendered by Arthur Young and Company, otherwise Contractor shall pay for such services.

5. In the event governmental action or inaction prevents or substantially impedes Mobil's manufacture or sale of the herbicide which it produces from NBE, Mobil may terminate this Agreement on 30 days written notice to the Contractor.

APPENDIX D

TO AGREEMENT

BETWEEN MOBIL CHEMICAL COMPANY

AND

EAGLE RIVER CHEMICAL CORPORATION

MADE AS OF

1 JAN. 1977

NBE RAW MATERIAL YIELDS

Usage per pound of 83% NBE:

95% CBE	-	0.820 lb.
EDC	-	0.095 lb.
H_2SO_4	-	0.840 lb.
HNO_3	-	0.330 lb.
NH_3	-	0.050 lb.

Illustrative calculation of Conversion fee to be paid by Mobil to Eagle River to produce 11,000,000 pounds of WAE, per annum subsequent to plant expansion as provided in Section 2 of this Amendment.

Cost base for fee determination subsequent to expansion:

Cost	450,000 lbs/month	916,666 lbs/month
Direct Variable	0.055	0.048
Direct Fixed	0.049	0.024
Period Costs	0.034	0.017
Profit	0.033	0.029*
Conversion Fee	¢ 0.171/pound	¢ 0.118 /pound

* 30% per annum return on investment of $1,047,000. (Original $597,000 plus additional $450,000)

Amendment To

APPENDIX B

To Agreement Between

Mobil Chemical Company

AND

Vertac, Incorporated

Effective ~~Revision~~ of January 1, 1977

1. Contractors compensation for NBE shall be as follows:

   A. For all NBE delivered hereunder: $0.171 per pound.

   B. Contractor shall invoice Mobil for each shipment of NBE made on an individual shipment basis. Prices are FOB, West Helena, Arkansas.

   C. The price per pound as provided for in Section 1. A above shall be subject to escalation or deescalation commencing in the second calendar quarter of 1977 and in each subsequent calendar quarter for the life of this Agreement, providing Eagle River advises Mobil 15 days before the first day of the subsequent quarter that a price adjustment is required as a result of the following computation:

$$\text{Fee} = 0.033 + F^2\left[\overset{0.45}{\cancel{0.5}}\,\frac{LDR^2}{\underset{5.43}{\cancel{5.63}}} + \overset{0.42}{\cancel{0.35}}\,\frac{CPI^2}{172.6} + \overset{0.13}{0.15}\left(\overset{0.75}{\cancel{0.7}}\,\frac{KWH^2}{\underset{.0267}{\cancel{0.029}}} + \overset{0.25}{\cancel{0.3}}\,\frac{MCF^2}{\underset{0.802}{\cancel{0.81}}}\right)\right]$$

Where,

1. F^2, is the basic cost, namely $0.~~144~~ 0.138 per pound ($0.171 less $0.033 profit) adjusted for reduction in maintenance costs on a semi-annual basis commencing on July 1, 1977, and on each subsequent January 1st and July 1st for the life of the agreement computed as follows:

$$F^2 = \overset{0.138}{\cancel{0.144}} - 0.032 + \left(\frac{M^2}{450{,}000}\right)$$

where, M^2 is the average monthly maintenance cost, as recorded

gm

in Eagle River's standard cost sheet, for maintaining Eagle River's NBE facility in a safe, efficient and reliable condition for the five (5) calendar months prior to computing escalation or deescalation as provided for in this Section 1.C.

2. 5.43 is the average lead operators rate in \$/hour for the first quarter of 1977 and LDR^2 is the average rate to be paid in the subsequent quarter.

3. 172.6 is the Consumer Price Index for September, 1976. CPI^2 will be the last published CPI figure available before computing the adjusted fee.

4. 0.0267 is the cost of electricity in dollars per KWH anticipated for the 1st quarter of 1976. KWH^2 is the average cost of electricity per KHW for the three last billing periods prior to computing the adjusted fee.

5. 0.802 is the cost of gas in dollars per ~~million~~ THOUSAND standard cubic feet anticipated for the first quarter of 1977. MCF^2 is the cost of gas per million standard cubic feet for the last billing prior to computing the adjusted fee.

2. In any calendar month in which the production of NBE is less than 400,000 pounds Mobil shall pay to Eagle River a stand-by fee of Seventy-Five Dollars (\$75.00) per hour for each hour for which production is interrupted for lack of raw materials, regardless of whether excused pursuant to ~~clauses~~ SECTION 18, in excess of fifty (50) hours in said month. Interruption shall be established from the plant log where the entry is made and witnessed by the Shift Supervisor that the reactor is ready for loading and awaiting the arrival of raw materials needed for the first manufacturing step. Time of arrival of and availability for loading shall be noted and witnessed by the

Shift Supervisor.

3. Within 30 days of receipt of written notice from Mobil of its desire to exercise its rights and option as provided in Section 2, of this Appendix, Eagle River shall provide Mobil with the following information:

   a. Eagle River's current estimate of the cost of adding the additional capacity for the Phase of expansion elected by Mobil from those shown in Appendix E, attached hereto.

   b. The time schedule estimated by Eagle River for completion of the expansion phases.

   c. The estimated decrease in cost per pound of NBE to be produced in the expanded facility based upon Mobil's best estimate of the NBE which it shall require Eagle River to produce monthly.

   d. The profit in dollars per pound of NBE required by Eagle River to provide an annual pretax return on Eagle River's fixed investment in NBE facilities which profit shall be thirty percent (30%) per annum on the sum of Five Hundred Ninety-Seven Thousand Dollars ($597,000.00) and Eagle River's estimate, made at the time Mobil exercises its option, of the cost of the additional facilities required by Mobil.

4. Prior to Eagle River's commencing the new construction, but in no event later than March 1, 1978. Mobil and Eagle River shall agree to compensation in dollars per pound for the total NBE output of the expanded facility and shall during the same period affirm the escalation or de-escalation formula provided for in Section 1 C. of this Appendix B, Revision of January 1, 1977, or negotiate in good faith to provide a replacement formula which shall reflect the ratio of costs among labor,

utilities and other costs that ~~are estimated to~~ will occur with the expanded output of NBE.

Illustrative calculation of NBE fee adjusted for maintenance costs and escalation or deescalation as provided under Section i.e. follows:

Conditions:

Example:

Time - June 15, 1977

M^2	Average monthly maintenance Charge January 1, 1977 to May 30, 1977	\$ 9,610
LDR^2	Average lead operator rate to be paid in 3rd quarter, 1977	\$ 5.70
CPI^2	Per Department of Commerce release for April, 1977	174.5
KWH^2	Average of three (3) billings immediately preceeding June 15, 1977	\$ 0.029
MCF^2	Billing of May 1977	\$ 0.84

$$F_2 = \overset{0.138}{\cancel{0.144}} - 0.032 + \frac{9610}{450{,}000}$$

$$= \overset{0.106}{\cancel{0.112}} + 0.021$$

$$= \overset{0.127}{\cancel{0.133}}$$

$$\text{Fee} = \$0.033 + \overset{0.127}{\cancel{0.133}}\left[\overset{0.456}{\cancel{0.5}}\,\frac{5.70}{\underset{5.43}{\cancel{5.63}}} + \overset{0.42}{\cancel{0.35}}\,\frac{174.5}{172.6} + \overset{0.13}{\cancel{0.15}}\left(\overset{0.75}{\cancel{0.7}}\,\frac{0.029}{\underset{0.267}{\cancel{0.029}}} + \overset{0.25}{\cancel{0.3}}\,\frac{0.84}{\underset{0.332}{\cancel{0.81}}}\right)\right]$$

$$\left[\overset{0.473}{\cancel{0.506}} + \overset{0.424}{\cancel{0.354}} + \overset{0.13}{\cancel{0.15}}\left(\overset{0.818}{\cancel{0.7}} + \overset{0.263}{\cancel{.311}}\right)\right]$$

$$\left[\overset{.897}{\cancel{.860}} + \overset{0.141}{\cancel{0.152}} = \overset{1.038}{\cancel{1.012}}\right]$$

$$\text{Fee} = 0.033 + \underset{0.127}{\cancel{0.133}} \times \underset{1.038}{\cancel{1.012}} = 0.033 + \underset{0.132}{\cancel{0.135}}$$

Fee = \$~~0.168~~ 0.165 per pound for 3rd quarter 1977

The following illustrative calculation demonstrates the manner in which, the stand-by fee provided in Section 2 of this Appendix B, Revision of January 1, 1977 shall be computed.

Month - April 1977

NBE produced 368,000 pounds

Hours down time due to lack of raw materials - 72

72-50 = Hours stand-by chargeable to Mobil

22 x $75 = $1,650

D. Shackelford

2.(b) of Amendment to Agreement (top page)

(c) In the event Mobil exercises its rights to require EAgle River to expand its NBE capacity pursuant to this Section 2., the terms of this Amendment to Agreement shall be further amended to change the termination date from December 31, 1979, to a date no earlier than 30 months subsequent to the date Eagle River's commences production of NBE at the rate of production utilizing the planned expanded capacity as provided under the terms and conditions of this Section 2., and Amended Appendix B, Section 3 and 4.

Insert for appendix B

Illustrative calculation of Conversion fee to be paid by Mobil to Eagle River to produce 11,000,000 pounds of NBE, per annum subsequent to plant expansion as provided in Section 2 of this Amendment.

Cost base for fee determination subsequent to expansion:

Cost	450,000 lbs/month	916,666 lbs/month
Direct Variable	0.055	0.048
Direct Fixed	0.049	0.024
Period Costs	0.034	0.017
Profit	0.033	0.029*
Conversion Fee	0.171	0.118

* 30% per annum return on investment of $1,047,000. (Original $597,000 plus additional $450,000)

Bill Shackelford

11/3/76

Please destroy the second and third pages of the agreement section of the Mobil proposed contract mailed to you on 11/2/76. Add the attached as the new pages two and three.

Thank you.

J. J. O'Neill

NOW, THEREFORE, the Agreement is amended as follows:

1. Eagle River is substituted for Vertac as the "Contractor" identified in the Agreement.

2. (a) In consideration of the payment by Mobil to Eagle River of the sum of Seventy Five Thousand Dollar ($75,000), the receipt of which Eagle River hereby acknowledges, Eagle River hereby grants to Mobil the exclusive right and option during the term of this agreement to require Eagle River to expand Eagle River's NBE capacity in accordance with the terms and conditions as provided in this Section 2. up to an annual production capacity of NBE of 12,000,000 pounds more or less. Said option may be exercised by written notice from Mobil to Eagle River made no later than July 1, 1977, to expand its capacity to 7,000,000 pounds of NBE more or less per annum. Mobil may exercise its option as provided in ~~the~~ THIS Section 2. to require Eagle River to increase its capacity to 9,000,000 pounds more or less of NBE or to 12,000,000 pounds more or less of NBE per annum providing said option is exercised by written notice to Eagle River no later than December 31, 1977.

(b) Within 30 days of receipt of Mobil's written request for expansion of Eagle River's NBE facilities as provided in Section 2. (a) above, Eagle River shall provide Mobil with a proposed construction schedule and an estimate of the cost of making the expansion requested by Mobil. The parties shall negotiate in good faith to establish compensation for NBE to be produced in the expanded facility according to the procedure outlined in Appendix B, Revision of January 1, 1977, attached hereto. Eagle River will be under no obligation to undertake the construction of the additional facilities until Mobil and

Eagle River have reached an agreement on compensation to be paid by Mobil for each pound of NBE produced by Eagle River in the expanded facility as provided in Appendix B, Revision of January 1, 1979

3. Section 12 of the Agreement is amended by changing the date "March 31, 1978" to "December 31, 1979".

4. Section 13 of the Agreement is amended by changing "Appendix B" to "Amended Appendix B", effective as of the date of this Amendment to the Agreement.

5. Section 20 of the Agreement is deleted.

6. Section 21 of the Agreement is amended by deleting the last sentence and inserting the following in lieu thereof:

"The provisions of Sections 6, 7, 10 and 16 of this contract shall survive any termination of this contract."

7. Section 25 is deleted and the following is inserted in lieu thereof:

"25. The term of this contract shall commence from the date of this Amendment to Agreement first above written and shall terminate on December 31, 1979 unless earlier terminated pursuant to Section 21 hereof."

8. All other terms and conditions of the Agreement shall remain in full force and effect during the period thereof, as amended herein.

IN WITNESS WHEREOF, Mobil, Vertac and Eagle River have hereunder executed this contract.

MOBIL CHEMICAL COMPANY

By: ______________________
Title: ____________________
Date: _____________________

VERTAC, INC.

By: ______________________
Title: ____________________
Date: _____________________

EAGLE RIVER CHEMICAL CORPORATION

By:

POINTS SERVED OVERNIGHT BY

F & W EXPRESS INC.

Memphis, Tennessee

575 SO. FRONT 1-3-77 TEL. 527-4551

To John, Mike, George
Dave –

Here is addendum to
Mobil contract proposed
by Taggert –
Would appreciate your
thoughts – particularly
w. regard to formula
for low level produ. comp.
and 4 a, b, c, in
new appendix B –

RS

TERMINALS

MEMPHIS
527-4551

CLARKSDALE
627-7333

CLEVELAND
843-5396

DYERSBURG
AT 5-4491

GREENVILLE
ED 5-1118

DAILY OVERNIGHT DELIVERY

B.S.

November 1, 1976

Mr. D. B. Faggert
Mobil Chemical Company
P. O. Box 26683
Richmond, Virginia 23261

Re: Agreement of September 1, 1975

Dear Don:

As discussed in Memphis, October 14th we are proposing a revision to ~~our existing~~ subject NBE agreement to provide a more viable basis for the retention of Eagle River as your supplier of this material. A copy of our proposed "Amendment to Agreement" is enclosed ~~in a letter to you of this date~~. We believe a number of mutual interests will be served by this proposal most of which we had the opportunity to discuss during your visit.

Foremost, is our understanding, which we believe you share, that Eagle River has demonstrated a high degree of competence in producing NBE and has at all times performed in a timely and efficient manner. It is a matter of record that the material efficiency factors, since the start-up of the facility, have exceeded original expectations, resulting in a savings which has inured solely to the benefit of Mobil.

We also believe ~~that~~ it is important to Mobil that Eagle River has the ability to add incremental capacity, to meet Mobil's growing requirements for NBE, with modest capital expenditures. Attached as Exhibit E to the proposed amendment is a summary of Eagle River's expansion capability on a three phase program which would raise the plant capacity incrementally from approximately 6,000,000 pounds annually to a total of approximately 12,000,000 pounds annually. The three phases which would raise the annual capacity to 7, 9, and 12 million pounds are presently estimated to cost $50,000; $150,000 and

Mr. D. B. Faggert
Page 2
November 1, 1976

$250,000 respectively. Thus for a capital expansion totaling about $450,000 an additional 6,000,000 pounds of NBE capacity would be provided. THE COST PER POUND OF PRODUCT would be significantly reduced in the expanded plant.

The puropose for proposing a revision to the Agreement at this time is that it will be impossible for Eagle River to continue as a supplier of NBE, on either a short or long term basis, unless provision is made to increase Eagle River's compensation for its manufacturing services recognizing that (1) operating costs have escalated since September, 1975, (2) experience has proven the original Eagle River cost estimates for the production of NBE by Mobil's process were too low particularily in the consumption of utilities and operating supplies and in its requirements for laboratory and maintenance services and (3) the fact that throughout the history of the contract there has been an unreliable supply of CBE, the NBE precursor, and during periods of CBE shortage or unavailability the basic costs of the Eagle River's NBE facility have necessarily continued with little or no NBE output to absorb these costs and in addition the frequent down times have created abnormal corrosion problems in our facility.

Attached is a summary of operating costs at monthly NBE outputs of 400,000; 450,000 and 500,000 pounds estimated for the first quarter of 1977, which provides the basis for our request that Eagle River's fee be increased ~~for~~ in the revised agreement, subject to escalation or deescalation as necessary and as provided in the ~~proposed~~ formula described and illustrated in the proposed amendment to Appendix B, ~~Revision of~~ January ~~1, 1977~~, which is attached to our enclosed proposal amendment.

We know that Mobil ~~would~~ expects Eagle River to earn a fair return on its investment in order to assure its continuance as a reliable supplier. Accordingly, we are asking that our fee for manufacturing NBE be raised

.171
from \$0.16 to \$0.17¢ per pound. We have established this fee on ~~good~~ faith alone that Mobil will provide, in the future, sufficient CBE to permit Eagle River to produce and transfer to Mobil an average of 450,000 pounds of NBE per month at which output Eagle River would earn an after tax return on our ORIGINAL fixed investment of 15.0%. Since we have no control over the raw material source and as a consequence may not, thru our own fault, achieve an average output of 450,000 pounds per month, we are forced to assume the risk of having little or no profit. In view of this ~~consequently~~ we do not feel our request of fee to be at all unreasonable.

As you know, over 80% of our costs continue whether or not we are producing NBE. When the facility is down for lack of raw material all fixed costs and the bulk of our direct variable costs continue since we cannot maintain reliability by dismissing the assigned labor force while awaiting raw material nor can we assign our fixed costs to other products. The only costs not incurred during shutdowns for material are a portion of the utilities but even these are not totally eliminated and maintenance costs rundown.

Since our quotation provides only modest profit while producing at the maximum anticipated rates, we must have protection from Mobil for stand-by costs incurred by Eagle River when and if it is necessary to temporarily suspend operations due to failure to receive raw material. ~~from Mobil~~. Accordingly, we propose that in any calendar month that NBE production drops below 400,000 pounds due to lack of raw materials that Mobil pay to Eagle River a stand-by charge of \$75.00 per hour for all hours our reactor is down awaiting raw materials in excess of 50 hours. The stand-by cost would reimburse us for our out-of-pocket costs and fixed charges associated with the NBE production but would during such stand-by periods, deprive us of the profits we would normally expect to earn on our fixed investment. Since it is understood that Mobil desires to operate at or near the Eagle River plant capacity and that only the shortage of raw material, generally CBE, causes suspension of NBE operations it is entirely proper, in our opinion, and essential to us that we be reimbursed for our stand-by costs. In the event such charges are necessary we feel that the fee is rightfully a part of the CBE cost to Mobil and not an NBE manufacturing cost to be borne by either of us.

With regard to our proposal for escalation or deescalation, we assume that Mobil would consider this essential, as we do, in a three year manufacturing agreement. In our judgement, the proposed formula properly reflects the effect that changing labor rates, utilities and other costs would have upon the cost of producing NBE, over ~~a~~ the long term. We have injected two variations in the formula both of which inure to the sole benefit of Mobil. First, we are excluding ~~from the fee the~~ our profit factor from the escalation formula and as a consequence only labor, utilities and associated operating costs are escalated or deescalated in the proportion they bear to the overall cost. Secondly, and of great significance to Mobil is the fact that we believe Eagle River's cost to date for maintenance are abnormally high and this cost can be reduced considerably in the future if the projected rates of 400,000 to 500,000 pounds of product per month are maintained. Down time creates very serious problems in nitration plants and the up and down operation we have experienced during the past year has had its toll. In addition we are making every effort to make permanent corrections rather than to ~~continue~~ just replac~~ing~~e ~~of~~ components that have had high maintenance cost ~~requirements~~ due to the corrosive conditions. Accordingly, we are offering to pass on all cost improvements in the maintenance area that result from the continuous operation and component replacement. This is provided for in ~~an escalation~~ the formula by passing ~~on semiannually~~ the benefits that result on to you semi-annually. You will note, ~~for example~~ that based on recent ~~operation~~ experience, we have had to estimate maintenance for the immediate future at $0.032 per pound of product. If we cut this cost in half during the first five months of 1977, which we believe is possible with a high ..., we will pass the savings of 1.6 cents per pound on to you directly in the last half of 1977.

As you know our performance in the first year of the contract 9/1/75 thru August 31, 1976, was very disappointing. The chronically short supply of CBE resulted in average outputs below that which we believed would be the case when we agreed to the compensation rate. Since our costs were relatively constant there were too few months when profit offset the high losses experienced in the poor months such as March and ~~in~~ the summer months. The low production in turn led to serious plant deterioration and high~~er~~ maintenance costs. Our loss through the first year was $20,477. In addition, the original investment was underestimated and the fixed cost reached $597,000. The loss ~~This~~ and the higher investment cost have ~~has seriously~~ affected Eagle River's overall profitability adversely ~~financial condition~~. As a consequence of our original spending, however, we have provided the frame work for a much larger plant which will greatly reduce the incremental cost of NBE to Mobil in the future. For example, we estimate that by adding 6,000,000 pounds of incremental capacity to Eagle River's present NBE plant the overall cost of producing NBE can be reduced about one third. ~~1/3 with a less than to be expected capital requirement to be recovered.~~

.25

Considering the savings potential to accrue to Mobil by retaining Eagle River as its primary NBE producer and in recognition that Eagle River has lost substantial funds during the past year because of the low rate of production which raised the unit production cost above its fee and in addition, ~~was the primary~~ caused ~~for~~ excessive corrosion to its facility, we are proposing that Mobil pay to us a fee for extending the contract and offering an option from us to ~~agreeing to~~ expand incrementally, as requested by Mobil, within the capability described above. Accordingly, we request that upon the signing of the attached proposed amendment that Mobil pay to Eagle River a renewal and option ~~a~~ fee of $75,000.

We would like to complete the amendment so that it will become effective January 1, 1977, for a three year term. Should you have any questions concerning our proposal, please call me.

Best Regards.

Make 50,000

Sincerely,

VERTAC CONSOLIDATED

J. J. O'Neill
Vice President
Planning E Development

JJO/gn

SUMMARY OF OPERATING COSTS (IN $)

NBE MANUFACTURE FOR

FIRST QUARTER, 1977

NOVEMBER 2, 1976

[illegible]

[illegible]	400,000 POUNDS		450,000 POUNDS		500,000 POUNDS	
DIRECT VARIABLE COST						
SALARY & FRINGES	1792	.004	1792	.004	1792	.004
WAGES & FRINGES	9996	.025	9996	.022	9996	.020
SUBTOTAL	11,788	.030	11,788	.026	11,788	.024
UTILITIES						
ELECTRICITY	4920	.013	5535	.013	6150	.012
WATER	550	.001	600	.001	750	.002
STEAM	1600	.004	1800	.004	2000	.004
SUBTOTAL	7,070	.018	7,935	.018	8,900	.018
OTHER						
NITROGEN	2880	.007	3240	.007	3600	.007
OTHER	1859	.005	1859	.004	1859	.004
SUBTOTAL	4,739	.012	5,099	.011	5,459	.011
SUBTOTAL	23,597	.059	24,522	.055	26,147	.053
DIRECT FIXED COST						
LABORATORY	3973	.010	3973	.009	3973	.008
STORES/REC.	906	.002	906	.002	906	.002
SAFETY/SEC.	2977	.007	2977	.007	2977	.006
MAINTENANCE	14252	.036	14252	.032	14252	.029
CORPORATE G/A	3000	.008	3000	.003	3000	.004
PERIOD COSTS						
ADMINISTRATIVE	5706	.014	5706	.013	5706	.011
INS., TXS., DEPR.	6388	.016	6388	.014	6388	.013
SUBTOTAL	37,202	.093	37,202	.083	37,202	.074
~~TOTAL~~ SUB TOTAL	60,799	.152	62,024	.138	63,349	.127
PRETAX PROFIT	7,600	.019	14,926	.033	22,151	.044

TABLE I

MOBIL NITRATION (NBE) EXPANSION

EVEL OF PANSION	MONTHLY CAPACITY MLBS	ANNUAL CAPACITY MMLBS	CAPITAL * REQ'D $M	ADDITIONAL** EXPENSES	REMARKS
RRENT	450	+5	none	none	Unit requires shakedown at higher production levels (sustained). Batch cycle times well documented.
CURRENT TAINABLE	600	+7	0-50	add operator on days for tank trucks	Replace selected CS piping and pumps with SS items. Requires slight increase in batch si and high stream factor. pH control of NH_3 & EDC storage recommended but not essential.
	800	+9	150-200	add operator on swing shift for tank trucks	Requires additional 3.5M gal SS reactor to allow separate phase separation & neutralization thus freeing nitration reactor. Add additional CBE storage. Add second cooling tower.
I	1000	12	250-450	add third operator spot add day production supervisor for Mobil unit	Requires conversion of 3.5 M gal SS reactor (per above) to nitration service including two acid meas. bottles & their pumps, weigh cell & reactor interlocks, heat exchanger for reactor cooling etc.. Add NBE storage tank, enlarge spent acid & am. sulfate storage all to 20M gal. Add building structure & roof annex for reactor. Add second refrigeration unit. Convert NBE stora (current) to crude NBE/EDC surge. Feed stripper semi-continous "ala" Mobil NBE process from this converted tank.

* Low capital range value represents minimum capital for that phase only. High capital range value represents total capital thru each phase (i.e. total capital thru Phase III is $450M).

** Represents 9 operators Phase I, 10 operators Phase II, & 12 operators Phase III.

	INSTALLED COST	REMARKS
1. pH control for NH_3 addition	$ 5M	Uniloc type pH probe & transmitter/controller & control valve/SS tubing with valves, flush points, strainer, etc.
2. EDC storage 20M gal CS with pump	20M	Tank +$6M plus pump $1M, concrete foundation, piping, level instrumentation cons, vent & flame arrestor.
3. Piping & Equipment revisions	25M	Replace CS process pumps with SS. Replace CS piping in EDC system, stripper vent, system etc.
TOTAL	50M Phase I	
4. Add reactor 3.5 M SS with transfer pump	75M	Base reactor $20-30M per J. E. Fowler, Times 3 for foundation, aqua NH_3 & process piping, electrical etc. Include weigh cell & base structural.
5. CBE storage 20M gal CS with pumps	25M	Ditto above item 2 plus cost of panelcoil (S5M heated) & insulation.
6. Cooling tower	50M	Installed cost plus pumps by new or good shape used Marley Model 453-201 or similar ($24M~1/30/75).
TOTAL	150M Phase 2	
7. Acid feed tanks & pumps	20M	Two small 1Mgal CS (H_2SO_4) & aluminum (HNO_3) acid feed tanks with small (ECO) metering pumps ($5M times 4)
8. Enlarge Spent Acid & Am. sulfate storage	15M	Add CS rings to go from 10 Mgal to 20M gal in the field (Materials $7M & labor $8M)
9. Reactor Heat Exchanger & large circulating pumps	40M	Heat Exchanger (10M), pump $6M Bare Cost
10. NBE Storage 20Mgal CS with pump	25M	Ditto 5
11. Building Structure & roof	35M	Structural steel for additional large bay & roof (transite) to house new reactor, acid feed system reactor heat exchanger & refrigeration.
12. Refrigeration	100M	150M ton new or good used (J.E. Fowler $30M similar unit prod.21--$65 new unit 1/30/75 quote).
13. Modify stripper for semi-continous operation & other minor changes	15M	Revise piping, add level instrument or weigh cell to stripper.
TOTAL	250M Phase 3	
TOTAL EXPANSION	$450M	

LDR_1 = , the lead operator rate used for labor costs in calculation of total cost of product @ 400, and 500 m #/mo

CPI_1 =

KWH_1 = base used in above calculation

MCF_1 = " "

$$F = 0.17 \left[0.5 \frac{LDR^2}{LDR_1^2} + 0.35 \frac{CPI^2}{CPI^2} + 0.15 \left(0.7 \frac{KWH^2}{KWH_1^2} + 0.3 \frac{MCF^2}{MCF^1} \right) \right]$$

NBE P/L ANALYSIS

	400,000		450,000		500,000	
REVENUE						
DIRECT VARIABLE COST						
SALARY & FRINGES	1792	.004	1792	.004	1792	.004
WAGES & FRINGES	9996	.025	9996	.022	9996	.020
SUBTOTAL	11,788	.029	11,788	.026	11,788	.024
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WATER	550	.001	600	.001	750	.002
STEAM	1600	.004	1800	.004	2000	.004
SUBTOTAL	7,070	.018	7,935	.018	8,900	.018
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OTHER	1859	.005	1859	.004	1859	.004
SUBTOTAL	4,739	.012	5,099	.011	5,459	.011
SUBTOTAL	23,597	.059	24,822	.055	26,147	.053
DIRECT FIXED COST						
LABORATORY	3973	.010	3973	.009	3973	.008
STORES/REC.	906	.002	906	.002	906	.002
SAFETY/SEC.	2977	.007	2977	.007	2977	.006
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SUBTOTAL	37,202	.093	37,202	.083	37,202	.074
TOTAL	60,799	.152	62,024	.138	63,349	.127

EAGLE RIVER CHEMICAL CORP.

CALCULATION OF SHIFT SUPERVISOR

AVERAGE SALARIES

Bobby Vallun	276.92
Melvin Haynes	288.64
Joel Walker	265.38
Andy Seeman	282.69
	1,113.63 - ave - 278.40

(52 wk)($278.40)(4men)÷(12mos) = $4,825.60 x (1.08) = $5211

ASS'T PLANT MANAGER

(1/2)(2233.33) = 1,116.00 x (1.10) = 1227

	$6438
ALLOCATED %	x .236
	1519
ADD FRINGES (.18)	1.18
	$1792

10-25-76

EAGLE RIVER CHEMICAL CORP.

CALCULATION OF NBE (MOBIL) WAGES

AVE. WAGES - $4.79 (SEE ATTACHED)

STRAIGHT TIME

(24HR)(365DAY)($4.79)(2 MEN PER SHIFT) ÷ (12 MOS) =	6,993

SHOWER TIME:

(13 SHIFT CYCLES)(10.5 HR CYCLE)($7.19)(8MEN) ÷ (12MOS)=	654

6TH DAY:

(52WKS)(8HR) ÷ (12MOS) =	83
ADD: O/T (36.5 HR)($7.19)	262
	7,992
ANTICIPATED INCREASE	X 1.06
TOTAL	8,472
ADD: FRINGES (.18)	1,524
	9,996

10-25-76

EAGLE RIVER CHEMICAL CORP.

DETAIL OF MAINTENANCE CHARGES

AVE. MAN - 3.33
AVE. WAGE- 5.06

WAGES & FRINGES

(3.33 MEN)($5.06)(40HR)(52WK) ÷ (12MOS) =		2920	
OVERTIME			
(3.33 MEN)($7.59)(4 HR/WK)(52WK) ÷ 12MOS)=		438	
SHOWER TIME			
(3.33 MEN)($7.59)(2.5HR/WK)(52WKS) ÷ (12MOS)=		273	
	SUB-TOTAL	3631	
ANTICIPATED INCREASE		X 1.06	
	SUB-TOTAL	3848	
	ADD: FRINGES (.18)	692	$4540
SALARIES & FRINGES			
($2600 SALARIES/MO)(.28 MEN) =		728	
ANTICIPATED INCREASE		X 1.08	
	SUB-TOTAL	786	
	ADD: FRINGES (.18)	141	927
MAINTENANCE SUPPLIES			4800
MAINTENANCE OVERHEAD			2900
OTHER (TRAVEL, ORDINARY SUPPLIES, MAINT.TOOLS, ETC.)			1085
			$14252

10-25-76

EAGLE RIVER CHEMCIAL CORP.

DETAIL OF LABORATORY CHARGES

LABORATORY

Ave. Man - 2.264
Ave. Wage- 5.50 (Includes Scheduled Overtime)

WAGES & FRINGES

(2.264 men)(182.5 hr/mo)($5.50) =	2,272	
ANTICIPATED INCREASE	1.06	
SUB-TOTAL	2,408	
ADD: FRINGES (.18)	433	$2841

SALARY & FRINGES

LAB MGR. 1/4 - time	417	
CHEMIST 1/8 - time	157	
SUB-TOTAL	574	
ANTICIPATED INCREASE	1.08	
SUB-TOTAL	$ 620	
ADD: FRINGES (.18)	112	732
LAB SUPPLIES		100
LAB OVERHEAD		300
		$3973

ADMINISTRATIVE

	Total Department Chg.	NBE CHARGE	%
Administrative	9507	2244	
Engineering	5685	389	
Accounting	10165	2399	
Purchasing	2291	674	
	27648	5706	.206

WATER

ck#2665 - 8/18/76				
	Water Cost	805.36		
	Per 100 gal.	÷14,618	.05509	July
ck#2910 - 9/17/76				
	Water Cost	728.57		
	Per 100 gal.	÷13,127	.05550	August
ck#3060 - 10/18/76				
	Water Cost	674.45		
	Per 100 gal.	÷12,076	.05585	September

Total Water Cost 2208.38
Total Per 100 gal. ÷ 39,821
.0555

A) Usuage - .002 (.002)(.5550)= .001
Cost - .0555

B) (400,000)(.001) = 400 + 150 = 550
(450,000)(.001) = 450 + 150 = 600
(500,000)(.001) = 500 + 150 = 750

ELECTRICITY

ck#2685 - Meter 42-609-215				
	Electricity Cost	7,139.59		
	Tax	214.19		
		7,353.78		
	KWH	÷289,680	.02539	July
ck#2909 - Meter 42-609-215				
	Electricity Cost	7,566.14		
	Tax	266.98		
		7,793.12		
	KWH	÷ 301,920	.02581	August
ck#3073 - Meter 42-609-215				
	Electricity Cost	8,979.22		
	Tax	269.38		
		9,248.60		
	KWH	÷ 320,640	.02884	September

Total Cost July- September - 24,395.50
Total KWH ÷ 912,240
.02674

A) Usuage = .46 (.46)(.02674)=.0123
$ = .02674

B) ($.0123)(400,000 lb) = 4920
($.0123)(450,000 lb) = 5535
)$.0123)(500,000 lb) = 6150

STEAM

ck#2678	Steam Cost	5558.03	
	Per 1000 ft	÷ 7070	
		.7861	April
ck#2914	Steam Cost	3925.34	
	Per 1000 ft	÷ 4898	
		.8014	May
ck#3061	Steam Cost	2337.42	
	Per 1000 ft	÷ 2772	
		.8432	June

Total Steam Cost April - June 11,820.79
Total per 1000 ft^3 ÷ 14740
.80195

1.	ck#1203 - Arkla Gas Company			1/16/76
	Gas Cost		5858.61	
	Per 1000 cubic ft.	÷	7,845	
			.7468	
2.	ck#1498 - Arkla Gas Company			2/18/76
	Gas Cost		5469.18	
	Per 1000 cubic ft.	÷	7,099	
			.7704	
3.	ck#1634 - Arkla Gas Company			3/17/76
	Gas Cost		4768.00	
	Per 1000 cubic ft.	÷	5,836	
			.8170	
4.	ck#1787 - Arkla Gas Company			4/17/76
	Gas Cost		3976.43	
	Per 1000 cubic ft.	÷	4,984	
			.7978	
5.	ck#1984 - Arkla Gas Company			5/24/76
	Gas Cost		5558.03	
	Per 1000 cubic ft.	÷	7,070	
			.7861	
6.	ck#2320 - Arkla Gas Company			6/16/76
	Gas Cost		3925.34	
	Per 1000 cubic ft.	÷	4,898	
			.8014	
7.	ck#2499 - Arkla Gas Company			7/26/76
	Gas Cost		2337.42	
	Per 1000 cubic ft.	÷	2,772	
			.8432	
8.	ck#2678 - Arkla Gas Company			8/19/76
	Gas Cost		428.93	
	Per 1000 cubic ft.	÷	394	
			1.0887	
9.	ck#2914 - Arkla Gas Company			9/20/76
	Gas Cost		610.18	
	Per 1000 cubic ft.	÷	568	
			1.0743	
10.	ck#3061 - Arkla Gas Company			10/18/76
	Gas Cost		561.50	
	Per 1000 cubic ft.	÷	476	
			1.180	

1. ck#1211 - Woodruff Electric Coop. Corp. 1/16/76
Meter #42-609-215
Electricity Cost 5870.90 (2.998)mills/kwh
Tax 176.13 6047.03
Kilowatt Hours ÷ 30400
.19892

2. ck#1463 - Woodruff Electric Coop. Corp. 2/16/76
Meter #42-609-215
Electricity Cost 6166.70 (2.629)
Tax 185.01 6351.71
Kilowatt Hours ÷233,280
.02723

3. ck#1616 - Woodruff Electric Coop. Corp. 3/11/76
Meter #42-609-215
Electricity Cost 5609.61 (3.216)
Tax 168.29 5777.90
Kilowatt Hours ÷ 8080
.71509

4. ck#1768 - Woodruff Electric Coop. Corp. 4/14/76
Meter #42-609-215
Electricity Cost 5812.17 (4.464)
Tax 174.37 5986.54
Kilowatt Hours ÷206,640
.02897

5. ck#1976 - Woodruff Electric Coop. Corp. 5/24/76
Meter #42-609-215
Electricity Cost 6535.69 (5.542)
Tax 196.07 6731.76
Kilowatt Hours ÷233,280
.02886

6. ck#2305 - Woodruff Electric Coop. Corp. 6/15/76
Meter #42-609-215
Electricity Cost 7133.45 (6.541)
Tax 214.00 7347.45
Kilowatt Hours ÷247,440
.02969

7. ck#2477 - Woodruff Electric Coop. Corp. 7/14/76
Meter #42-609-215
Electricity Cost 6923.17 (5.764)
Tax 207.70 7130.87
Kilowatt Hours ÷248,160
.02873

8. ck#2658 - Woodruff Electric Coop. Corp. 8/18/76
Meter #42-609-215
Electricity Cost 7139.59 (3.527)
Tax 214.19 7353.78
Kilowatt Hours ÷289,680
.02539

9. ck#2909 - Woodruff Electric Coop. Corp. 9/17/76
Meter #42-609-215
Electricity Cost 7566.14 (4.222)
Tax 226.98 7793.12
Kilowatt Hours ÷301,920
.02581

1. ck#1200 - West Helena Water Utilities 1/15/76
Water Cost 848.50
Per 100 gallons ÷ 20,082
.04225

2. ck#1474 - West Helena Water Utilities 2/17/76
Water Cost 1003.86
Per 100 gallons ÷ 23,853
.04208

3. ck#1635 - West Helena Water Utilities 3/17/76
Water Cost 1037.42
Per 100 gallons ÷ 19,724
.05260

4. ck#1786 - West Helena Water Utilities 4/19/76
Water Cost 817.46
Per 100 gallons ÷ 15,453
.05290

5. ck#1982 - West Helena Water Utilities 5/24/76
Water Cost 968.82
Per 100 gallons ÷ 18,392
.05268

6. ck#2307 - West Helena Water Utilities 6/16/76
Water Cost 868.34
Per 100 gallons ÷ 16,441
.05282

7. ck#2485 - West Helena Water Utilities 7/16/76
Water Cost 818.23
Per 100 gallons ÷ 15,468
.05290

8. ck#2665 - West Helena Water Utilities 8/18/76
Water Cost 805.36
Per 100 gallons ÷ 14,618
.05509

9. ck#2910 - West Helena Water Utilities 9/17/76
Water Cost 728.57
Per 100 gallons ÷ 13,127
.05550

10. ck#3060 - West Helena Water Utilities 10/18/76
Water Cost 674.45
Per 100 gallons ÷ 12,076
.05585

10-29-76

MOBIL CONTRACT RENEGOTIATION

Proposed price Escalation Formula

$$.17\left[0.450\ \frac{LDR2}{5.43} + 0.42\ \frac{CPI2}{172.6} + 0.13\left(.75\ \frac{KWH^2}{.02674} + .25\ \frac{MCF^2}{.80195}\right.\right]$$

$$\begin{array}{r} 5.12 \\ 1.06 \\ \hline 5.43 \end{array}$$

ELECTRICITY

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	Per 1000 ft	÷	7070	
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	Per 1000 ft	÷	4898	
			.8014	May
ck#3061	Steam Cost		2337.42	
	Per 1000 ft	÷	2772	
			.8432	June

Total Steam Cost April - June		11,820.79
Total per 1000 ft^3	÷	14740
		.80195

10-25-76

To J.J. O'NEILL

Subj Mobil NBE Contract - Your Memo of 10-19-76

We recommend:

1. Renew contract for 3 years effective Jan. 1, 1977

2. New fee of 17 cents per pound and this new fee to be modified first day of each quarter by the formula

$$F = \left(\frac{LOR}{5.12} \times \frac{CPI}{172.6} \right)$$

where:

F is fee in cents per pound
LOR is our Lead Operators rate of pay in \$ per hour,
CPI is average of last three monthly consumer price index figures published by Bureau of Labor Statistics.

3. Establish minimum monthly payment of \$68,000.

4. Provide temporary adjustment of 3 cents per pound for next 6 million pounds to cover

loss to date and provide 15 percent
after tax return on investment
from start up through Sept. 1976

7/20/7

MOBIL NITRATION NOTE for cost basis

① OVERHEADS ARE CURRENTLY BEING SPLIT TWO ways BETWEEN LANNATE & MOBIL. HOPEFULLY, PROPANIL & BASALIN WILL PROVIDE a four way SPLIT. FOR cost evaluation suggest 30% as a REASONABLE SPLIT OVER THE long haul.

② A supplemental Summary of MOBIL costs is attached for NOVEMBER THRU MARCH.

SEE ATTACHED #1

③ TOTAL NBE COST SINCE STARTUP is $.18 /# * at an average RATE of 280 M#s. AVERAGE costs By category are shown in the attached (Breakdown By my guestimate).

SEE ATTACHED

④ FACTORS WHICH COULD effect COSTS UP OR DOWN:

- 5 & 2 production schedule for low VOLUME PERIODS
- MOBIL should BE nearing END of SPARE PARTS STOCKING, POST STARTUP changes, ETC. (Significant MAINT. COSTS)
- ER STAFF REDUCTION & ALLOCATION of Maintenance personnel to capital CONSTRUCTION PROJECTS

* EST. $.14 /# PER R. TARRANT / average Based on

+ MOBIL is a IRRITATION WITH corrosives. Experience shows a Higher Level of maintenance than Product 10 (pump seals, corrosion of carbon steel portions of process, etc.)
+ WASTE TREATMENT expenses (now zero)

(5) BOB'S SUMMARY SHOULD actually HAVE BEEN figured FOR an average Rate of 280 M #s/MT. HIS original graph SHOWED us wanting to charge 24¢/# AT THIS Level & producing the same for 14¢/#. Therefore, our performance to date is 4¢/# (18¢ vs 14¢) over original forecast. Conversely our fee is now JUST 16¢/#. Instead of making, WE'RE losing money with all yields under forecast & high quality product!

See attached #3

#/

MOBIL NITRATION MANUFACTURING COST

DESCRIPTION OF CHARGES	NOVEMBER THRU- DECEMBER	JANUARY	FEBRUARY	MARCH	TOTA
Wages Supervisors	7578.57	3461.73	2562.96	2606.62	16,209
Wages Production	9561.71	5818.32	7858.43	6902.83	30,141
Wages Maintenance	497.07	2226.83	4443.11	2107.40	9,274
Power & Utilities	4579.21	6930.48	4533.66	3479.66	19,523
Supplies	7811.29	4313.91	2964.25	3482.22	18,571
Miscellaneous	1380.84				1,380
Maintenance Supplies			2748.79	4962.10	7,710
ALLOCATED BURDEN	21,424.93	26,850.15	35,706.29	29,952.57	113,933.
TOTAL CHARGES	52,833.62	49,601.42	60,817.49	53,493.40	216,745.
LBS. NBE PRODUCED	437,356	299,468	366,746	87,110	1,190,68
PER LB. COST	.1208	.1656	.1658	.6141	.1820

John Miller
George [illegible]
Jim [illegible]

#2

ESTIMATED
[illegible] MONTHLY MOBIL *
[illegible]

(BASIS — 7.5 MONTHS & 2 MONTHS NBE)
(NOVEMBER 75 — JUNE 76)

	AVERAGE	ORIGINAL ESTIMATE (RMF)
	$	
UTILITIES	5500	
OPER. LABOR	6800	
MAINT. **	10500	
SUPPLIES	1300	
SUPERVISION	2900	
FIXED & SERVICE	20,000	
(DEPRECIATION ESTIMATE $4800 PER MONTH INCLUDED PLUS LNB EXPENSE of $3200)		
TOTAL	$ 50 M	$ 39M *
	~18 ¢/#	~14 ¢/# *

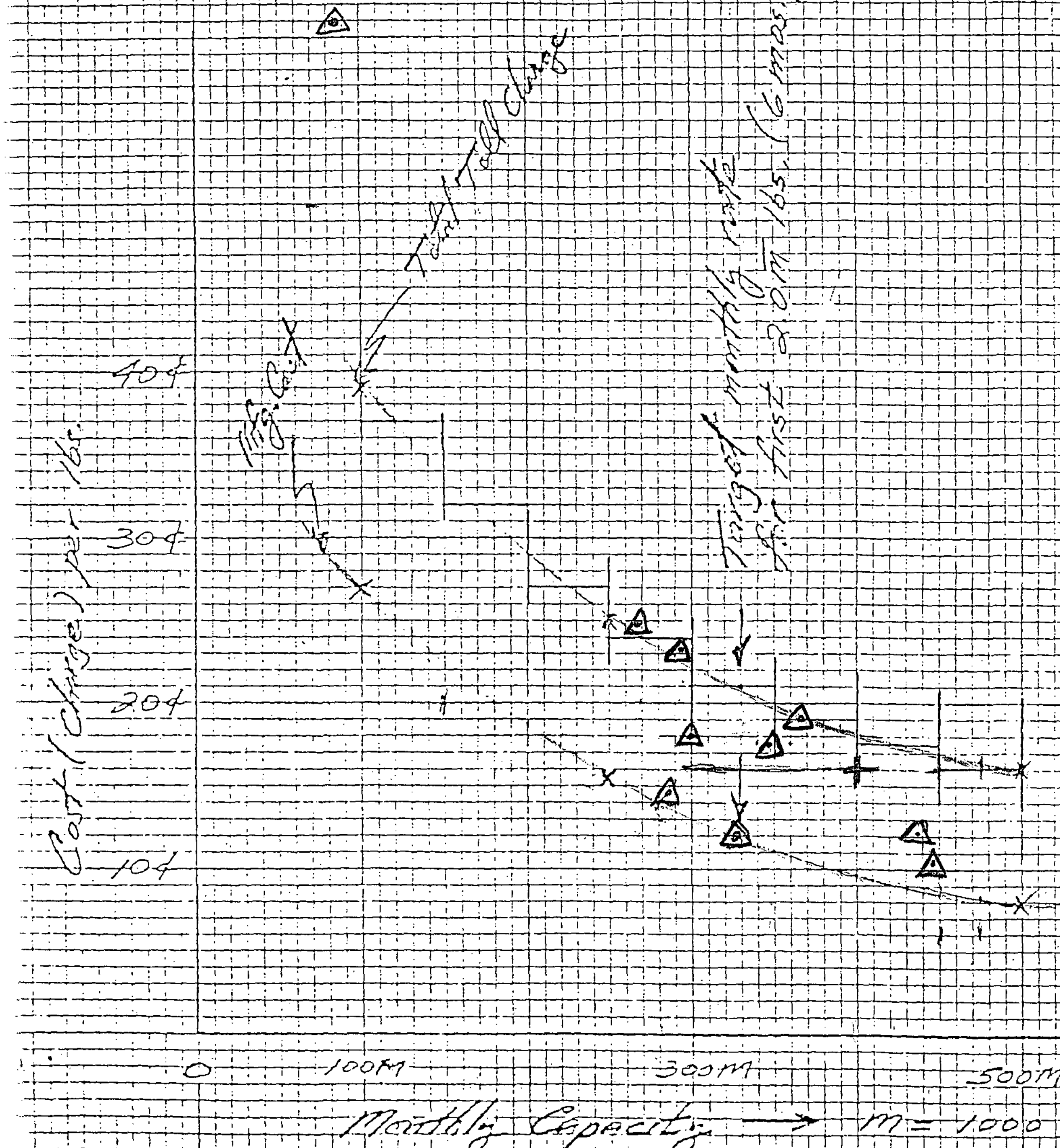
RMFABIAN COST CURVE 6/30/75

* 280 MLBS/MT — FACTORED FROM 320 MLBS/MT

** INCLUDES $ M/MT [illegible] THRU MARCH ALLOCATED

Mobil Nitration Proposal

R. Fabian 6/30/75



Monthly Capacity M#	Total Toll Chg.
100-149	37¢
150-199	32¢
200-249	27¢
250-299	24¢
300-349	21¢
350-399	19¢
400-449	17.5¢
450-500	16¢

Mobil Nitration Contract

R. Fa[illegible]
7-19

Summary of Actual Costs vs. Estimated

Actual Operating Costs (Total Monthly Dollars)

QEH ESL	Original Estimate (RMF) (1)	(2) Avg Mo. @ 320m #/mo.	April '76	May '76	June
Utilities	2560	5120	5218 (3)	8471 (3)	866
Oper Labor	8640	8000	8272	6675	521
120% Maint	63 5440	56 4480	85 7029	71 11,369	24,2
20 Oper Supplies	31 3200	64 5120	27 2380	71 6059 (4)	75 501
10 Supervision	31 3200	85 4480	27 2221	32 2013	71 161
Fixed + Service					
60 Gen. Wks Deprec.	11,160 74%		10,952 (5) 75%	14,901 (5) 115	19,47 253
40 Lab.	12 1000		37 3080	53 3495	113 323
Subtotal	9600	30,720	14,038	17,896	#22,709
Total Cost	35,200	#57,920	39,158	52,473	#68,06
Unit Cost	0.11	0.181	0.119	0.183	0.23
Production	320,000	320,000#	328,327	287,325	293,45
Unit $/ F+S	0.08	0.085	0.077	0.120	0.154

Deprec. 7757 NBE
1799 [illegible]

Notes: 1. Est. dtd. 6/30/75 @ 320,000 #/mo. level
2. Represents actual oper. from start-up @ Lake C. thru March '76
3. Incl. "other" shown as direct mfg. cost
4. Total of "stores + receiv." + "safety + security"
5. Incl. "general plant" + "administration"

10-13-76

Mobil Contract - Changes Needed -

① Change Specs. in Exh. A & C to reflect actual present operation. See L. Conway

② Minimum Monthly Production -

$600,000 investment -

15% return after taxes

30% return before taxes, eg to $180 000/year or $15,000 per month -

Ave. Monthly Operating Cost April thru Sept '76 is $57,450/month

15 000 profit

$72,450/month is required total revenue

@ 16¢/lb this gives 450,000 lbs./month.

③ Need sliding scale or other protection against production below this rate. See George Mathers letter on this subject for surface curve.

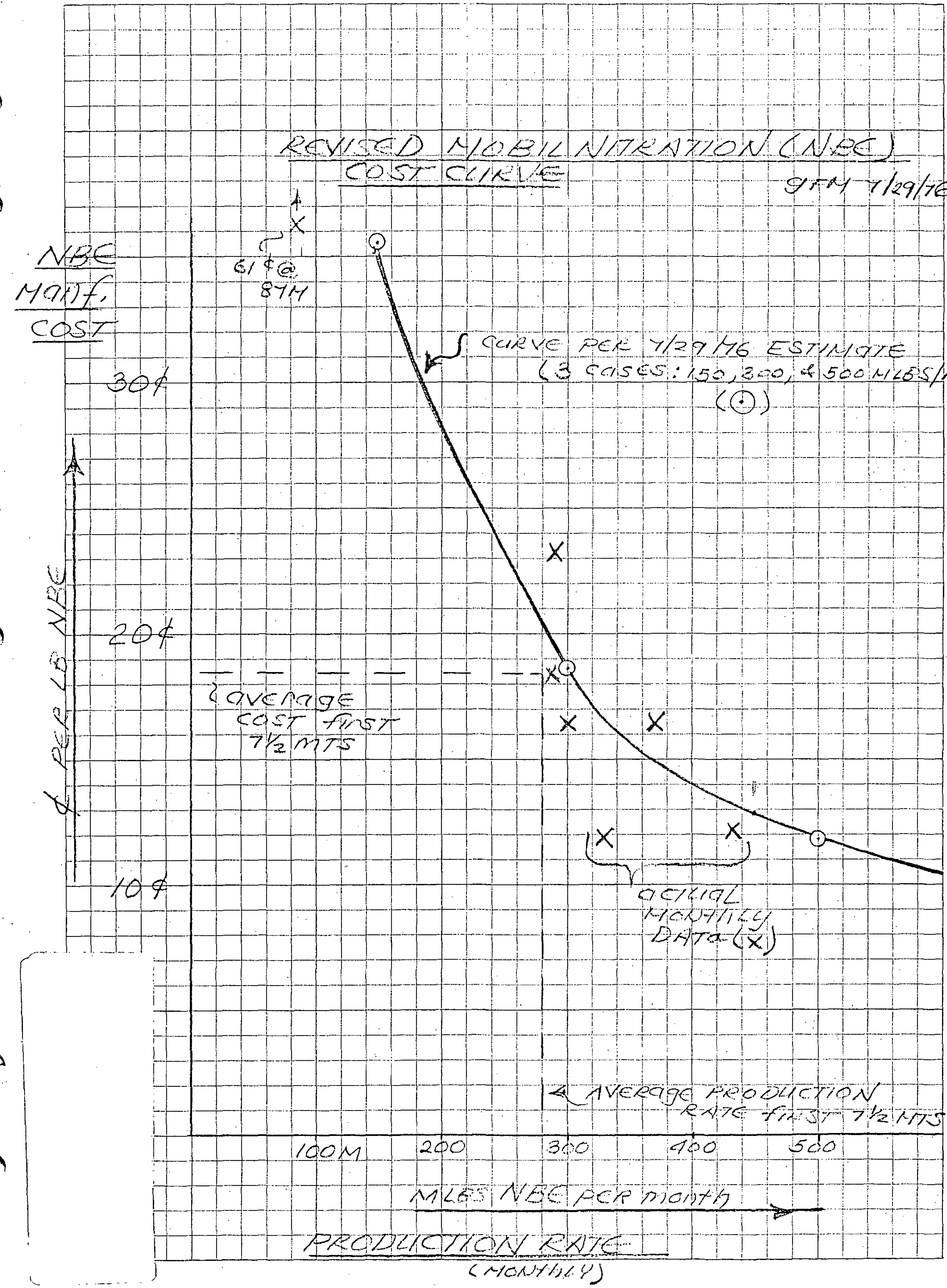
To BOB FABIAN 7/30/76

SUBJECT – MOBIL NBC

attached Revised MOBIL COST CURVE, manufacturing cost estimate, & supporting notes. as the notes indicate Both Historical and estimated parameters have been used for this estimate. also attached is a MOBIL expansion TABLE outlining our suggested approach. I would like to understand MOBIL'S Business philosophy before committing a more detailed study on the expansion. A Ballpark Manf. cost for the 1MM LB/MT plant would be about 8¢/#. again the cost curve would enter in with a cost of about 14¢/# at the .5MMLB/MT level with the larger plant. I believe the expanded plant would offer outstanding reliability & flexibility.

George

CC:
BILL Shackelford ✓
JOHN Miles
George Mathai (2)


REVISED MOBIL NITRATION (NBC)
COST CURVE
GFM 7/29/76
NBE Manf. COST
¢ PER LB NBE
30¢
20¢
10¢
61¢ @ 87M
CURVE PER 7/29/76 ESTIMATE
(3 cases: 150, 300, & 500 MLBS/MT,
(⊙)
average cost first 7½ MTS
actual monthly DATA (X)
AVERAGE PRODUCTION RATE first 7½ MTS
100M
200
300
400
500
MLBS NBE PER month
PRODUCTION RATE
(MONTHLY)

ESTIMATED MANUFACTURING COST

REVISED MOBIL NITRATION (NBE) — SFH 7/29/76

* BASE CASE

1. PLANT PRODUCTION (ALL COST ARE ON UNIT BASIS)

BASIS: EXISTING facility 500 MLBS PER month NBE Capacity

	PLANT CAPACITY		
	150 MLBS	300 MLBS	500 MLBS
	30 %	60 %	100 %

2. RAW MATERIAL & FUEL COST

Type	Units	Unit Cost	Usage /	$	$	$
TOLL CONVERSION MATERIALS BY MOBIL						
Subtotal, Raw Materials & Fuel				$	$	$

3. UTILITIES

Type	Units	Unit Cost	Usage * / # NBE	$/MT *	$	$	$
Electricity	KWH	2.8¢	.46	3864	SEE NOTES #6	.0129	SEE NOTES # 6
Steam	LBS	.2¢	2.00	1200		.0040	
Water	Mgal	40¢	.002	240		.0008	
Nitrogen	SCF	.36¢	2.00	2160		.0072	
Waste disposal:							
aqueous	LBS	.5¢	1.00	1500		.0050	
organic	LBS	6.0¢	.01	180		.0006	
Subtotal, Utilities					$ .0427	$ .0305	$ .0259
4. OPERATING LABOR $+10m (2 operating spots)					$ .0704	$ .0352	$ .0211
5. ROYALTIES & RENTALS $						$	$
6. BURDEN							
A. Repair Labor $4.8M (4 MEN)					$ .0323	$ .0162	$ .0097
B. Repair Supplies 1.1 times R. LABOR					$ .0356	$ .0178	$ .0107
C. Operating Supplies 40% OPER. LABOR					.0282	.0141	.0084
D. Supervision 30% OPER LABOR					.0210	.0106	.0063
E. Indirect Payroll (IN LABOR)					$ —	$ —	$ —
Subtotal, Burden					.1171	.0587	.0351
7. FIXED AND SERVICE COSTS							
A. General Works Expense (+ $10 M)					$ .0694	$ .0347	$ .0208
B. Depreciation $4800 per month					.0320	.0160	.0096
C. Laboratory ($3.4 M)					.0228	.0114	.0069
D.							
Subtotal, Fixed & Service Costs					$ .1242	$ .0621	$ .0373
8. TOTAL BULK COST					$	$ —	$ —
9. LOADING, PACKING & SHIPPING							
A.							
B.					$ —	$ —	$ —
10. CONTINGENCIES					$ —	$ —	$ —
11. TOTAL MFG. COST					$ .3544	$ .1865	$ .1194

NOTES: * BASE ESTIMATE 300 MLBS/MT.

Form VAFE 6

MOBIL NITRATION
Manf. COST BASIS

①

ASSUMPTIONS   GFM 7/29/76

(1) BASE CASE 300MLBS PER MONTH NBE PRODUCTION (60% CAPACITY).

(2) COSTS ARE DEVELOPED AS FORECAST OR BUDGET GRADE QUALITY BASED ON KNOWN OR ESTIMATED MANUFACTURING REQUIREMENTS.

(3) OUT of a total of four manufacturing PROCESS UNITS AT Eagle River Chemical, three are assumed to BE in operation for this ESTIMATE. Because of more or less equivalent staffing in each unit, NBE then requires one third direct operating staff.

(4) ITEM 3 TO TAKE CARE of so called "idle plant" charges. In other words in a given month where just one or two units would BE running, "idle plant" allocations would prevent distortion. However, having three of four process units in operation would seem to BE fair recognition of THE RISKS & inefficiencies inherent with changeable TOLL operations.

(5) The first 7½ months of NBE operation represent a fair guide for predicting future costs. Cost reductions such as the completion of significant post start up changes, spare parts stocking, staff reductions/reallocations, etc. will BE

offset by increases in waste treatment (now zero) & continued maintenance in a corrosive nitration process. THUS HISTORICAL DATA IS USED WITH KNOWN & ESTIMATED PARAMETERS for the manufacturing COSTS. Propanil was operating OR ABSORBING COSTS for almost all of this time period.

(6) UTILITIES

(a) A capacity factor exists for all UTILITIES. Base Loading and/or a fixed portion is inherent WITH Each UTILITY component. FOR this estimate @ 300 M LBS/MT Base this factor is estimated at:

	capacity factor
150 M LBS/MT	1.4
300 M LBS/MT	1.0
500 M LBS/MT	.85

(B) ELECTRICAL

EST. Connected Horsepower is 469. At Base case of 300 M LBS NBE, estimated KW equals 188 (BATCH OPERATION). Price PER KWH is from 7/25/76 BILLING for MOBIL transformer. The resulting estimate of $3864/MT ELECTRICAL compares reasonably for JUNE actual ($3510 @ 293 M LBS NBE).

(C) STEAM

EST. Steam consumption is Based on STEAM JET CONSUMPTION, STEAM TRACING, & PLANT STEAM LOSSES. EST. STEAM COST compares with actual June Natural gas cost ($1200 ESTIMATE VS. actual June $1145)

(D) Nitrogen based on plus 15 SCFM for purged dp cells, other instruments & purges requiring Nitrogen, and misc. losses & line blowing. N_2 price based on 7/13/76 billing and includes a proration of $900 N_2 tank rental. Estimated Nitrogen of $2160 compares with actual June figure of $1811.

(E) Aqueous effluent quantity based on contaminated steam jet condensate less vapor loss plus washdowns and spills. Price of effluent treatment assumes minor activated carbon consumption, conventional biological treatment, & associated Eagle River treatment expenses. Organic wastes based on solids generated in process such as spent filter cartridges, etc. Neither cost is now recognized on current monthly cost page.

(7) Operators

2 spots

(46.75 mn hrs/wk X 8 men X $5.22/hr X 1.25 Burden X 4.33 wks)

= $10,567

(1/2 hr shower time + 42 hr week schedule for shift work and all @ straight time)

(8) Maintenance

4 men allocated to Mobil including instrumentation, electrical, machinist, pipefitter & mill...

(43.75 mn hrs/wk X 4 ...

(9) MAINTENANCE SUPPLY FACTOR (1.1) REFLECTS ④
PROCESS CORROSIVITY.

(10) OPERATING SUPPLIES which includes
safety equals $1227 VERSUS $1300
for average of 7.5 mts. of OPERATION

(11) General PLANT includes safety personnel,
security, purchasing, stores, engineering,
accounting, secretarial, & administrative.

(Head count of 25 people X $1M/MT average
SALARY X 1/3 allocation to MOBIL) = $8,333
- General plant expenses such as
supplies, rentals, etc. assumed
as 25% of labor $\underline{2,083}$
$10,416

(12) Depreciation Based on actual
Depreciation ($593 M. capitalization).

(13) Laboratory. Direct technician labor estimated
at 1/2 SPOT for MOBIL
(46.75 mn hrs/WK X 2 MEN X $5.22/HR X 1.25 Burden X 4.33 wks
= $2642

PLUS 30% for chemist support
activity ($791).
Estimated Lab cost compares
WITH actual average for 7½ months
of $3200.

(14) BUDGET COSTS VERSUS ACTUAL COSTS for FIRST 7½ MONTHS

	EST. a/ COST	AVERAGE B/ 7.5 MTS	
UTILITIES (W/O WASTE DISPOSAL)	$7464	$5160	(More direct June allocation, utilities were $8682)
OPERATING LABOR (W BURDEN)	10567	8500	(EST. COST at latest labor rate & top operator wage class)
MAINTENANCE	10180	10500	
SUPPLIES	4227	1300	
SUPERVISION & GEN. PLANT & ADMINS.	13586	14900	
DEPRECIATION	4800	~4800	
LABORATORY	3400	3200	
	$54,224	$51,360	
PLUS WASTE DISPOSAL	1,680		
TOTAL	$55,904		

UNIT COST 18.6 ¢/# $18.34

a/ 300 MLBS NBE/MT

B/ 280 MLBS NBE/MT

MOBIL NITRATION (NBE) EXPANSION

GFH/7/29/76

LEVEL of EXPANSION	Monthly capacity MLBS	annual capacity MMLBS	capital req'D $M	additional expenses	REMARKS
CURRENT	450	+5	NONE	NONE	Unit requires shakedown at higher PRODUCTION LEVELS (SUSTAINED). Batch cycle times well documented.
I CURRENT ATTAINABLE	600	+7	0–25	add operator on days for tank trucks?	Requires slight increase in Batch size and high stream factor. PH control of NH_3 & EDC storage Recommended But Not Essential.
II	800	+9.5	100–150	add operator on Days for Tank TRUCKS (if not above)	REQUIRES additional 3.5M gal SS REACTOR to allow separate phase separation & neutralization thus freeing nitration reactor. add additional NBE storage.
III	1000	12	250–400	- add operator on swing shift for tank trucks - add day supervisor for MOBIL unit	Requires conversion of 3.5M gal SS reactor (per above) to Nitration service including two acid meas. Bottles & their pumps, weigh cell & reactor interlocks, heat exchanger for reactor cooling etc. Add CBE storage tank, enlarge spent acid & am. sulfate storage all to 20M gal. add BUILDING structure & roof annex for reactor. add 2nd refrigeration UNIT and 2nd cooling tower. Convert NBE storage (current) to crude NBE/EDC surge. Feed STRIPPER SEMI-CONTINOUS "ala" MOBIL NBE process from this converted tank

/

Agenda for July 23 Cost Review Mtg.

Product 10

1. Review P+L summary for 2nd Qtr. (R. Fabian will provide)
2. Review "Cost of Sales Analysis" dtd. 6-22-76 (page A25 in E.R. Cash Forecast)
   What is the basis for total unit cost of #1.54/gal?

3. Review proposed exhibit C-2 and "unit consumption" back-up requested by du Pont

4. Review cost reduction program status
5. Review J. O'Neil's memo re background items

Mobil NBE

1. Review R. Fabian's memo dtd. 7-19-76 (incl. attachment)

2. Review cost reduction program status

3. Review "Cost of Sales Analysis" dtd 6-22-76 (page A26 in E.R. Cash Forecast)
   What is the bass for total unit cost of #0.12/lbs.?
   Actual 2nd qtr. cost was #0.176/lbs.

RWF

Eff 4-1-76

5/27/76
Revised 6-27
R.B.

"EXHIBIT C"
MANUFACTURING COST/PRODUCT 10
1,200,000 GALS/YEAR CAPACITY @ 330 DAYS/YEAR OPERATION

	MAX. USAGE PER GALLON	MAXIMUM COST VARIABLE COST/GALLON	FIXED PER MONTH	STAND-BY COST/MONTH
Raw Material Usage				
Slurry (as 100% MTAAO)	1.33	--	--	
Methyl Isocyanate	0.75	--	--	
Methanol	5.25	--	--	
Methylene Cl_2	0.70 (1)	0.1313 (3)	--	
Utilities				
Electricity		$0.05	$1,500	
Steam		0.023	740	
Water		0.0022	100	
Nitrogen		0.019	450	
Natural Gas		--	700	
Sub Total		$0.0942	$3,490	$450
Operating Labor				
Operating		--	$ 9,800	
Packaging		$0.08	4,800	
Sub Total		$0.08	$14,600	$2,433 (2)
Maintenance				
Repair Labor		--	$ 4,500	
Maintenance Materials		--	4,500	
Maintenance Overhead		--	2,000	
Sub Total		--	$11,000	$2,000
Miscellaneous Operating Expenses				
Supervision & Clerical		--	$3,000	$2,000
Operating Materials		$0.0055	1,000	
Laboratory		--	5,000	1,750
Shipping & Handling		--	400	
Sub Total		$0.0055	$9,400	$3,750
Administrative Overhead				
Sub Total		--	$6,800	$4,000
Waste Disposal				
Sub Total		$0.28	--	--
	TOTAL	0.5910 ~~$0.4597~~	$45,290	$12,633

1) 1.10 - Month of April
0.90 - Month of May
0.70 - Month of June (will remain at this level provided significant additional investment is not required)

2) One time charge for stand-by

(3) Based on $0.1875/lbs purchase price

	Initials	Date
Prepared by		
Approved by		

NBE

	June	May	April
Raw Materials			
Direct Mfg. Costs			
Salaries	.005	.007	.007
Wages	.020	.024	.025
Ordinary Supply		.007	
Nitrogen	.006	.002	.004
Gas	.004	.007	.004
Electricity	.012	.014	.007
Water	.001		.001
Waste Disposal			
Other	.007	.005	.001
Total Direct Mfg	.055	.066	.048
Indirect Mfg. Costs			
Laboratory	.011	.012	.009
Stores + Receiving	.003	.003	.001
Safety + Security	.014	.012	.006
Shipping + Packaging			.001
Maintenance	.083	.040	.021
General Plant	.028	.025	.020
Total Indirect Mfg	.139	.092	.058
Administration			
Overhead	.028	.025	.014
Corporate	.009		
Total Admin.	.038	.025	.014
Total Manufacturing Costs	.232	.183	.119

7/21/76

→ John Miles / Eagle River

Comments + ques. re proposed Exhibit C-2

I MeCl2

2A. What is specific program? How much time? Who does what?

2B. How much capital/expense do you anticipate?

II 4) N_2 How can you justify \$3500/mo. for N_2? What are the estimated individual uses within du Pont unit? How can we reduce the use?

III 2) Packaging labor
What will be required to package 100,000 gals/mo.? This cost continues to go up! This is one area where I tend to be on du Pont's side. If we go completely to U.C. coverage, what happens @ 40,000 gals/mo.?

IV Maint.
Why was this so high in June, i.e. \$18,518 vs. ≈ 12-14,000 in Apr. + May?

What is included in allocated maint.

what specific jobs in April-May-June could be classified as improvement or replacement capital vs. routine maint.?

How can we reduce these costs?

II. See my comment below about "unit consumptions"

How many people, what specific jobs do they perform?

VI & VIII See below

VIII – Program status on efforts to reduce waste volume, including mech. vacuum source.

General

See Hank Burman's letter. I thought you & I discussed this and it was understood that we needed "unit consumptions" in all areas that it was possible to define, including F.C. like natural gas and people functions like lab e.g. # man-hrs. per mo. × y #/man-hr., etc. Pls. have ready to discuss by Friday.

Also, pls. have available for Friday the amts. invoiced to du Pont for April-May-June vs. actual total costs

RMM

VERTAC CONSOLIDATED
A MEMBER OF THE VERTAC GROUP

SUITE 2414 • 5100 POPLAR
MEMPHIS, TN 38137

INTER-OFFICE CORRESPONDENCE

DATE: July 19, 1976

TO: J. W. SHACKELFORD

FROM: BOB FABIAN

SUBJECT: MOBIL HBB COSTS

REPLY REQUESTED BY (DATE)

The attachment summarizes our situation; however, there are many questions before one can understand these costs and hopefully project what future costs will be.

Some tentative conclusions that I have reached are:

(1) The original estimate, which was a combined effort of Miles, Mather and Fabian, is very close to actual, except for "fixed and service" costs; on the new IBM format, F & S is "general plant" plus "administration" (overhead & corporate).

(2) Utilites were badly underestimated.

(3) Operating labor was overestimated.

(4) Lab was badly underestimated.

(5) Maintenance costs, while apparently not too far from the estimate in the beginning, are getting completely out-of-control.

(6) Fixed and service, likewise, are continuing to increase out-of-control.

Bill, in order to understand these costs and develop a position for re-negotiating with Mobil, I must consult with your people on all aspects of this operation. Can we meet on Wednesday or Thursday of this week?

Bob Fabian

/et

CC: R. A. Guidi

Mobil Nitration Contract

R. Fabi[illegible]
7-19-[illegible]

Summary of Actual Costs vs. Estimated

Actual Operating Costs (Total Monthly Dollars)

	(1) Original Estimate (RMF)	(2) Avg. Mo. @ 320 M #/mo.	April '76	May '76	June '76
Utilities	2560	5120	5218 (3)	8491 (3)	8682
Oper. Labor	3640	8000	8272	6645	5812
Maint.	5440	4480	7029	11,369	24,236
Oper. Supplies	3200	5120	2388	6059 (4)	5014
Supervision	3200	4480	2221	2013	1610
Fixed Service					
Gen. Works / Deprec.	8,600		10,958 (5)	14,401 (5)	19,471 (5)
Lab.	1000		3080	3495	3238
Subtotal	9600	30,720	14,038	17,896	#22,709
Total Cost	35,200	#57,920	39,158	52,473	#68,063
Unit Cost	0.11	0.181	0.119	0.183	0.232
Production	320,000	320,000#	328,327	287,225	293,459
Unit w/o F+S	0.08	0.085	0.077	0.120	0.1545

Notes: 1. Est. [illegible] 6/30/75 @ 320,000 #/mo. level
2. Represents actual oper. from start-up @ [illegible]
thru March '76
3. Incl. "other" shown as direct mfg. cost
4. Total of "stores + receiv." + "safety + securit"
5. Incl. "general plant" + "administration"

CC: FRANK MADERICH, BIOCHEM

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE 198

ENERGY AND MATERIALS DEPARTMENT

JUL 19 1976

July 15, 1976

MR. ROBERT FABIAN
VERTAC CONSOLIDATED
5100 POPLAR - SUITE 246
MEMPHIS, TENNESSEE 38137

Dear Bob:

I would like to reply to two items presented at our July 8 meeting at Eagle River.

1. We would like you to actively investigate the use of a mechanical vacuum source in order to reduce the liquid waste volume. However, there is no commitment on Du Pont's part to purchase any equipment in this area until you submit a proposal for our review outlining the cost involved and we agree, in writing, to that proposal.

2. You submitted a new compensation schedule for our review. As back-up, please send us the background for each line item; background that not only shows how you developed each cost but which can also be used as a basis for future escalation.

Example: A. Utilities - Show units of consumption, such as kilowatts for electricity and cubic feet for gas plus the price you are currently paying.

B. Labor - Show number of operators and base pay plus benefits, etc., for said operators.

As soon as we receive this information, the faster we can establish an Exhibit "C", effective July 1, 1976.

Very truly yours,

Henry E. Burman

HENRY E. BURMAN
PURCHASING AGENT
CONTRACTING SECTION
EQUIPMENT AND SUPPLIES DIVISION

HEB/pjj

There's a world of things we're doing something a

6/22/76

To: Bill Shackelford
Re: Mobil Nitration

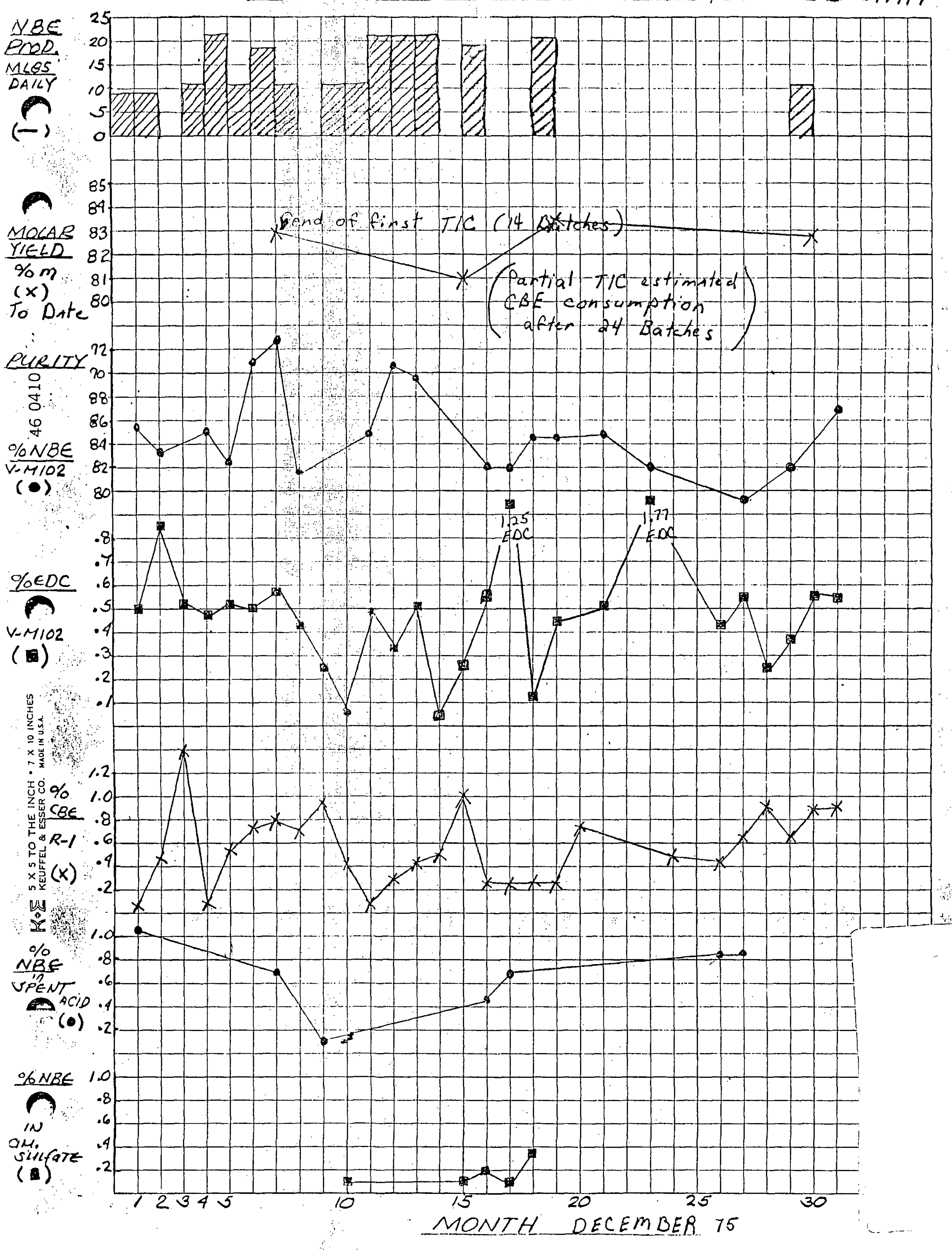
I talked to Don Taggart today. They are projecting the following NBE production for the last half of the year

July	350 M lbs.
Aug	400 M lbs.
Sept-Dec	500 M lbs

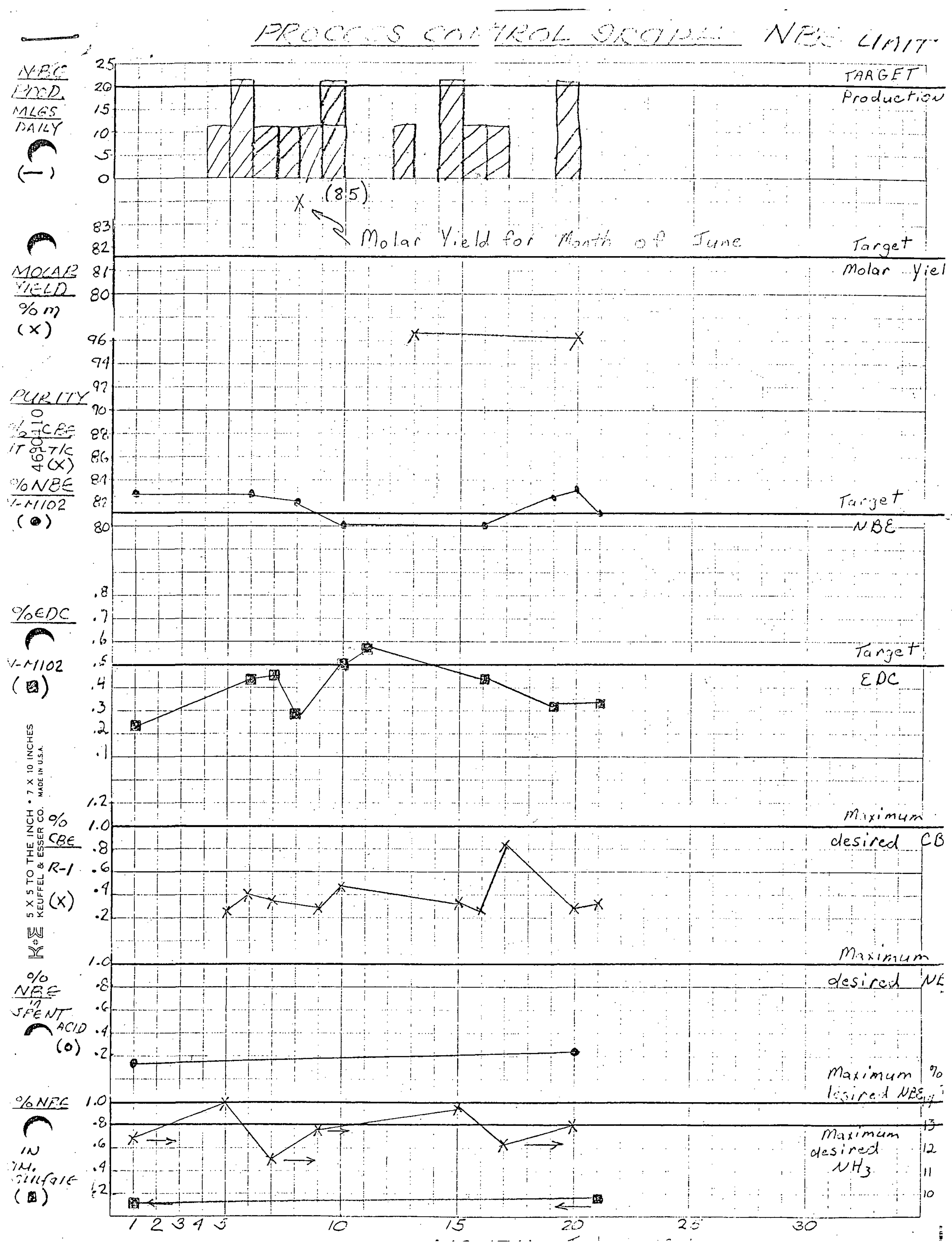
They are also interested in a ballpark cost estimate of maximum production from our unit. They are looking for an alternate source of ~ 500 M lbs/mo CBE & also capacity to make into NBE.

John Miles

cc: George Mather
Mike McKellar



NBE PROD. MLBS DAILY (—)
MOLAR YIELD %m (x) To Date
End of first T/C (14 Batches)
(Partial T/C estimated CBE consumption after 24 Batches)
PURITY
%NBE V-M102 (●)
1.25 EDC
1.77 EDC
%EDC V-M102 (■)
% CBE R-1 (x)
% NBE in SPENT ACID (●)
%NBE IN am. sulfate (■)
46 0410
5 X 5 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.
MONTH DECEMBER 75


PROCESS CONTROL GRAPH NBE UNIT
NBE PROD. MLBS DAILY
TARGET Production
(85)
Molar Yield for Month of June
Target Molar Yield
MOLAR YIELD %m (X)
PURITY
% CBE
%NBE
Target NBE
%EDC
Target EDC
% CBE R-1 (X)
Maximum desired CB
Maximum desired NE
% NBE in SPENT ACID (o)
%NBE IN AM. SULFATE
Maximum % desired NBE
Maximum desired NH3
5 X 5 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.